AUGUST, 1953

TEXAS State Journal of Medicine

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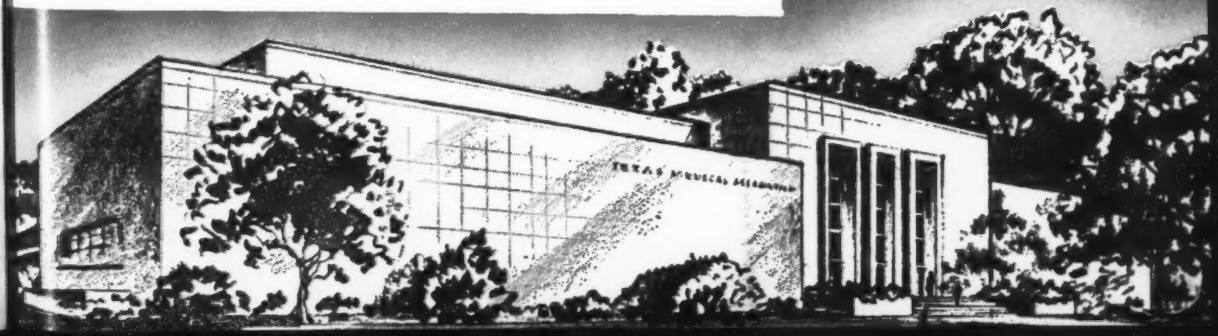

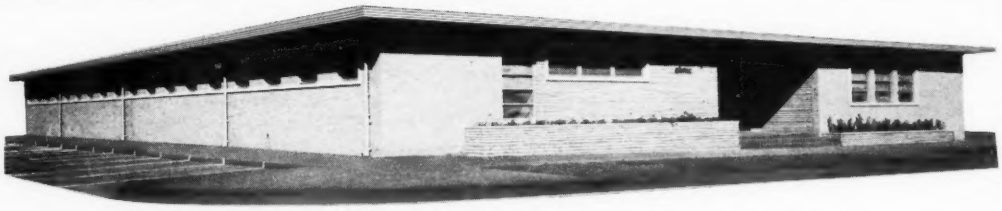

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AUC

President's Page

THE BRICKER AMENDMENT

The Bricker Amendment as it concerns us provides constitutional protection against the socialization of medicine through the treaty-making power now vested in the President of the United States. The alarming thought is the possibility that in this era of statism and reform-by-treaty urge the United States might enter into treaties which would make effective the socialization of medicine. Mr. John Foster Dulles, before he knew he would become Secretary of State, said in April, 1951, "The treaty-making power is an extraordinary power liable to abuse. Treaties make international law and also they make domestic law. . . . They are indeed more supreme than ordinary law. [They] can override the Constitution."

The amendment has had two major rewritings. It is currently worded in part as follows:

"Section 1. A provision of a treaty which conflicts with this Constitution shall not be of any force or effect.

"Section 2. A treaty shall become effective as the internal law in the United States only through legislation which would be valid in the absence of treaty.

"Section 3. Congress shall have power to regulate all executive . . . agreements. . . . All such agreements shall be subject to the limitations imposed on treaties . . . ."

If adopted by two-thirds vote of both the Senate and the House of Representatives and three-fourths vote of the state legislatures, the Bricker Resolution would become the Twenty-Third Amendment to our Constitution. The resolution is now stalled in the Senate Judiciary Committee over consideration of revisions which would make the wording acceptable to both the executive and legislative branches of the federal government. It seems likely that the bill will remain in the Senate committee until the end of the Eighty-Third Congress.

An example of binding domestic law enacted by treaty is an agreement with regard to migratory birds which fly from Canada across the

United States to Mexico. So many of these ducks and geese were being killed by hunters during their flight across the United States that it was feared the species would become extinct. A migratory bird protection law was passed by Congress in 1913. Federal courts declared the law invalid on the grounds it violated the Tenth Amendment to the Constitution. The United States and Canada then agreed by treaty to protect birds flying between the two countries, and the treaty's provisions are enforced as a domestic law. In 1920 the Supreme Court ruled in effect that the federal government can derive from treaties legislative powers not specifically granted by the Constitution. It seems evident that such broad interpretation of the treaty power goes beyond what the Constitution's authors intended and can do untold damage in fields far more important than bird legislation.

The International Labor Organization held a conference in Geneva in June, 1952. One of the main topics of discussion was the minimum standards of social security, including medical care. The standards for socialized medical care as envisaged by the ILO are far more drastic than any proposal yet made by a member of our own Congress. Yet, if we should have a sufficiently socialistic government in Washington, ratification of ILO proposals through the treaty-making power would make the socialization of medicine effective in this country regardless of our Constitution. We would be socialized by influences from abroad and left powerless to protect ourselves under present constitutional law.

"One of the greatest constitutional crises the country has ever faced," said the American Bar Association, which argued that the Bricker Amendment should be passed to protect the Union from dire peril. With such a definitely possible threat to our rights as a self-governing people now existing, it is imperative that we keep in contact with the progress of the Bricker Amendment through our United States Senators and Representatives and our State Senators and Representatives until the measure becomes the Twenty-Third Amendment to our American Constitution.

George Tierney M.D.

PTR diagnotes

PROLOGUE: In the interest of acquainting the Texas Medical Association membership with socioeconomic activities over the state and nation, this page will appear as a regular feature in the Journal. It is your page and it is hoped it will become something of value to you. Your ideas will be welcome, and further information concerning data contained on this page can be obtained at your central office in Austin. The Committee on Public Relations is interested in county society work as well as that of each individual in the Association--particularly your projects. So send in your tips and hints. We'd like to share them with others.

REPORT OF PUBLIC RELATIONS COMMITTEE: More about forums--Montgomery County Medical Society, Dayton, Ohio, highly successful in its four "Health Forums" attracting approximately 1,000 people per night. Forums were sponsored by the Dayton Daily News, which ran page ads daily. Subjects were "Growing Old Gracefully," "Your Heart and Your Health," "The Common Headache," and "Your Child and Polio." Texas county societies will receive examples of ads. Very smart public relations. Success lies in getting press-society co-sponsorship. Unexpected response--requests for "Better Secretaries-Training Tips" coming in fast--over 1,000 have been filled to date. Additional requests will be filled as quickly as possible. Outlines for courses are in preparation now.

Pauline Duffield, librarian of the Association's Memorial Library, at the Shamrock July 20-22 during the Postgraduate Medical Assembly of South Texas. Reason--displaying Dr. Nixon's "A History of the Texas Medical Association." Copies can be ordered from central office.

Special section plans are progressing rapidly--approximately twenty-five county societies have been contacted suggesting cooperative projects with local newspapers commemorating "100 years of organized medicine in Texas." Wonderful chance to tell the story of Texas medicine to Texas people in the desired manner. Several societies are enthusiastic.

Woman's Auxiliary handbook is progressing--should be in draft form by early September. Booklet will serve as outline guide for Auxiliary officers' duties on state and county level--also thought-starter for suggested projects. Should serve as handy reference.

ON THE NATIONAL SCENE: Excellent article on doctor-fee situation in the July issue of Woman's Home Companion. Called "How Much Should Your Doctor Charge," it is a competent report on what the article calls "a brand-new cure for doctor-bill fears." Writer, Howard Whitman, comments he is amazed to learn what medical societies and individual physicians all over the country are doing to take the mystery out of charges for doctors' services. One section of article is devoted to how one North Carolina physician, Dr. Davis G. Welton, president of the Mecklenburg County Society, attempts to avoid misunderstandings with regard to fees.

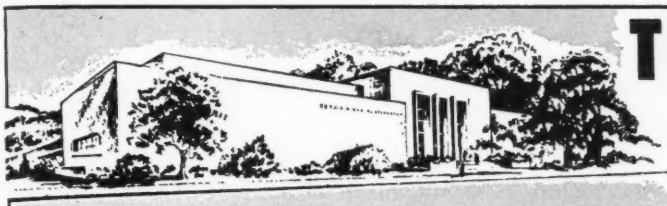
OTHER STATES REPORT: State Medical Society of Wisconsin reports that the Nurse Recruitment Committee of the Woman's Auxiliary has set up plans for organizing Future Nurses' Clubs in secondary schools, a project already carried on successfully by several Texas auxiliaries. During past year the Wisconsin committee has conducted number of institutes for training of speakers to address clubs--give accurate information on nurse training, earnings, etc.

Facts concerning doctor draft law are contained in a condensed fact-article in the July Membership News Letter of Medical Society of New Jersey. Much the same information appears on pages 526 and 527 of the July Texas State Journal. If interested, suggest you write for further details to Texas State Advisory Committee, 1801 Lamar Boulevard, Austin.

Medical Society of the State of North Carolina has called attention to June 22 Secretary's Letter from Dr. George F. Lull, secretary and general manager of the AMA. Dr. Lull recommends an excellent article entitled "Backing into Socialized Medicine" by Howard Buffett, who retired last year from Congress. It has been distributed in printed form at a nominal price (6 copies for $1) by Human Events, Inc., 1835 K Street, N. W., Washington, D.C. Says Dr. Lull: "Mr. Buffett has taken a new, up-to-date slant on the subject of socialized medicine which, he says, ought to be a dead issue in America, but isn't. He believes we are edging towards socialized medicine, whether we want it or not. 'We are backing into it,' he said, 'by way of militarism.' "

FROM OVER THE STATE: AMA Secretary's Letter of May 28 contains these sentences: "Physicians are invited to send their surplus medical text-books and medical journals to Korea for utilization of South Korean medical schools and hospitals. Mail shipments, express collect, to: Alameda Medical Depot, 2155 Webster Street, Alameda, Calif. Each shipment should be clearly marked: 'Kormeded'."

It is understood that the Auxiliary to the Harris County Medical Society will make this one of its chief projects soon. Could be that it would make excellent statewide activity. Nancy Palm, Public Relations Secretary, Harris County Medical Society, Medical Arts Building, Houston, can give detailed information.



TEXAS State Journal of Medicine

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Volume 49 **Austin, Texas, August, 1953** **Number 8**

"YEA, TEAM, LET'S GO!"

With the advent of fall, many a doctor will be looking forward to all of the color, the excitement that goes with rooting for dear old Blank U's football team. Probably his school spirit will be at an all-time high.

Perhaps of less dramatic nature, but of equal or greater significance, is his support of an entirely different aspect of university life: the medical curriculum. It need not of necessity be support only of his alma mater. The Latin derivation of the term "doctor" is "teacher." Although it is not given to all physicians literally to be teachers, they can participate in an effective way in the training of the young men and women who eventually are to join them in championing high standards of medical practice.

That way is through the donation of gifts to the American Medical Education Foundation.

Perhaps some of the advantages accruing from the support of this fund already have been pointed out to the individual doctor; the prevention of further government encroachment into private medicine, the tax-deductible nature of gifts to the fund, the possibility of earmarking donations for his own medical school. These reasons to varying extents may be selfish. However, when the physician realizes the fullness of his moral obligation to further the cause of medical education, he is likely to write a check for twice or ten times the amount he originally had in mind. If he considers his own medical heritage and what it means in terms of good care for his patients, a high standard of living for his family, and a firm foundation for the future progress of medicine, he not only will make his own personal gift to the foundation, he will urge his colleagues to be generous in their gifts.

During September an intensified fund-raising campaign for the American Medical Education Foundation will be initiated in Texas. Doctors will be taking part in the drive in different capacities, some in the role of directors, others as solicitors, still others as contributors. Regardless of his position on the "team," each physician interested in the future of medicine will do what he can to assure that the desired goal for Texas' share of contributions to the national educational fund is reached.

PR DIAGNOTES

From time to time during the past several years, bulletins and newsletters from the Committee on Public Relations have been sent to key members of the Texas Medical Association and its Woman's Auxiliary in an effort to keep them informed of activities of a public relations nature not only in Texas but throughout the country. Feeling that the type of information thus distributed should be available to all Texas physicians and their wives, the committee, with the backing of the Board of Trustees, this month is initiating a special page in the JOURNAL. Following the President's Page and facing the first editorial page, PR Diagnotes will appear in each issue.

Checking this new feature when the JOURNAL is delivered each month will be a quick, easy way to learn what is going on, public relations-wise. And it may be surprising to discover how many practical suggestions for local society and auxiliary programs and projects or personal and office activities will turn up. Comments about and material for the page will be welcomed by the Committee on Public Relations or the JOURNAL staff.

Uncle Sam Writes the Rules

An eye to business and simple courtesy would indicate that any doctor changing his mailing address should notify promptly those who customarily send him mail. Nevertheless, the Texas Medical Association routinely has had quantities of mail returned because of incorrect address, even though the latest address supplied by the physician has been used.

This problem, always troublesome, has become acute because of a recently adopted regulation of the Post Office. Second class mail (which includes the TEXAS STATE JOURNAL OF MEDICINE) no longer will be returned to the sender at second class rates (about 2 cents per copy) if undeliverable. Instead, the mail will be destroyed unless return fourth class postage (about 15 to 25 cents per copy) is guaranteed. More than thirty JOURNALS were destroyed under this new ruling in July.

Undoubtedly, the doctors who fail to receive their JOURNALS because of incorrect address eventually will write and ask for the missing copies—they always do. The conclusion is either (1) that replacement of undelivered JOURNALS cannot be guaranteed to subscribers, (2) that return postage for undelivered JOURNALS must be guaranteed (requiring a special notice on the wrapper as well as postage), or (3) that an additional reserve supply of JOURNALS to take care of replacement copies must be printed each month. In any event, it appears that the new Post Office regulation will add an appreciable expense to publication and distribution of the JOURNAL unless each member of the Texas Medical Association takes care to notify the organization of his every change of address.

The Post Office is trying to reduce its terrific annual deficit by many means, some of which make it more essential than ever that persons and organizations using the mail exercise care and caution to keep delay and expense at a minimum. The physicians of Texas and their wives can be of great help if they will notify the central office of the Texas Medical Association of their correct mailing addresses and of each change in that address.

NEW DIRECTORY SCHEDULED

A new directory of the membership of the Texas Medical Association is under way and probably will be ready for distribution (free to members) by the New Year. Each member of the Association has been asked to furnish before September 1 his correct name, mailing address, telephone number, and specialty, and to indicate whether or not he is in active practice. In addition to this information, the directory will contain a list of Texas hospitals, the text of the revised Medical Practice Act and autopsy law, and other material helpful to the practicing physician.

It is hoped that the new directory can be as complete and accurate as possible. Any questionnaire postal cards not already returned should be mailed back at once. Too, since only bona fide members of the Association can be included in the listing, any physician wanting his name to appear should be certain that his dues for 1953 have been received by the Association. Any member who has failed to receive a card asking for the directory information should write the Executive Secretary at once.

ORIGINAL ARTICLES

TUMOR SEMINAR

Conducted by

MATTHEW J. STEWART, M.D., Leeds, England

DR. A. O. SEVERANCE, San Antonio, Chairman: This is the eighth annual tumor seminar sponsored by the San Antonio Society of Pathologists with cooperation of the Texas Society of Pathologists and with financial support by the College of American Pathologists. We are also indebted to the American Cancer Society for a substantial grant, and in addition, to Dr. William O. Russell of the M. D. Anderson Hospital for Cancer Research in Houston. Thanks to a grant from the National Cancer Institute, National Institutes of Health, U. S. Public Health Service, Dr. Russell was able to make the slides which you have studied for the seminar. Today I would like to have Gen. Arthur R. Gaines, who is in command of Brooke Army Hospital, extend the official words of welcome.

General Gaines: This is the third time I have had this opportunity to extend a greeting to people attending this session. From my previous experience I know that it has developed into a wonderful tumor seminar, well arranged, well attended. We here at Brooke Army Hospital are glad to participate in it to a small extent, not only by our presence but by giving you the opportunity to use any facilities that we have. I hope that your day here will be pleasant and profitable.

Dr. Severance: General Gaines spoke about the "little" part which the Army plays in this seminar. Look at all the screens and projectors used to show the slides. This will give you an idea of how the Army has participated in this annual seminar.

At this time I should like to recognize some of the visitors. We have Gen. Elbert DeCoursey from the Armed Forces Institute of Pathology and Gen. E. A. Noyes, who is in command of the whole Brooke Army Medical Center. From Mexico City we have three distinguished pathologists, Dr. Antonio Villasana, Dr. Gabriel Alvarez, and Dr. Ernesto Contreras of the Mexican Army. Over here is Dr. William Tribby from Memphis, and here is Dr. Max Cutler from Chicago.

Now we will continue with the program at hand. I should like to turn it over to Col. C. J. Lind, who will be the moderator of today's session.

Colonel Lind: May I repeat what General Gaines said: we are here to serve you and if there is anything that we can do, ask any of the officers.

We in the hospital here are impressed with the work of Dr. Russell's group in preparing these slides. We have had some of that work before and realize what a good job they have done.

Within our group at Brooke Army Hospital there are many who have done a great deal of work. First, Mr. Henry S. Morasco, our photographer, has taken most of the pictures. Major Prentis E. Ball and his staff, particularly the enlisted men, the sergeants of the Laboratory Service, are responsible for the staging and other mechanics. And then Capt. Wallace J. Redner, Jr. is the one who, more than anyone else, is responsible for the preparation and organization of the material in this seminar. Captain Redner, I think, is carrying out a tradition set by his predecessors, Col. A. M. Richmond, who had the seminar last year, and Col. M. W. Bayliss the year before.

I take great pleasure in introducing Dr. Stewart, who is known to most of you as editor of the *British Journal of Pathology and Bacteriology*. However, he is a good deal more than that. He is a Scotsman through and through. He received his education at Glasgow, where he studied under Sir Robert Muir, the great pathologist. He took appointment at the Leeds University Medical School, where he became a full professor in 1918 and was dean of the Medical School from 1940 until 1948. He is given credit for much of the remarkably fine development which took place at that school. He also had a military connection in the first World War as well as the second. In World War I he was one of the first Allied doctors to study mustard gas effects. He is a man of widest interests, archeological, linguistic, humane. He is on his second visit to the United States. He was here in 1926 and is now en route around the world.

EDITOR'S NOTE: *The tumor seminar conducted by Dr. Stewart in San Antonio on October 27, 1951, was the eighth such annual conference sponsored by the San Antonio Society of Pathologists and the Texas Society of Pathologists in cooperation with the pathologists of Brooke Army Hospital. The material for study was supplied by Texas pathologists. Pathologists from throughout Texas and elsewhere attended the seminar and were furnished histories and slides for the cases under consideration. Additional microscopic slides were projected on the screen as each case was discussed by Dr. Stewart.*

Dr. Stewart retired and was succeeded in pathology by Dr. Rupert A. Willis, who conducted our seminar two years ago. It is doubly pleasant to have Dr. Stewart here because he brings Mrs. Stewart with him. She, too, is a physician who had an early interest in pathology and with Dr. Stewart has made a successful team.

It gives me the greatest pleasure to introduce the conductor of this tumor seminar, Professor Matthew J. Stewart.

Dr. Stewart: First I must express my keen appreciation of this invitation to take part in your world-famous tumor seminar. I knew, of course, all about Willis' coming here and what a marvelous time he had, but I didn't get much in the way of technical details from him. I have had to learn those since I have been here, and as I have never participated in an occasion of this kind, I hope you will forgive me if I am a little bit bemused. However, I have met with such great personal kindness from a large number of people in the few days I have been here that I feel very much at home.

In the second place I must express my appreciation of the work that has been done by Colonel Lind and his colleagues and especially by Captain Redner, whose help has been invaluable. He and I spent much of the day yesterday and the previous day studying the material and selecting fields for display. The amount of technical work that has to be done for a thing of this kind has been an eye-opener to me.

Thirdly, speaking as a morbid anatomist, it is a sheer delight to encounter a large audience like this of enthusiastic morbid anatomists. These seem to be so much the days of viruses and biochemistry and biophysics that one fears for our stable foundation of morbid anatomy, which tends rather to be discounted by the exponents of some of these—shall we say more progressive?—branches of science. But I think pathology is all right. I believe that morbid anatomy, if it has had a slight setback, is still able to hold its own. I don't know if any of you remember that some thirty years or so ago, a famous London physician, Sir James Goodhart, delivered an address to the Royal College of Physicians of London with the provocative title, "The Passing of Morbid Anatomy." Here was a man who had been trained and brought up as a morbid anatomist talking about its "passing." Well, the thirty-odd years which have elapsed since then have shown the falseness of that prophecy. This wonderful seminar started here seven years ago is an indication of the place which at least one branch of morbid anatomy still holds in America and must continue to hold the world over, if progress in the other medical sciences is to be guided aright. The study of diseased structure must proceed hand in hand with the study of disordered function.

Before we start on the cases, I understand that the diagnoses submitted by members of this assembly will first be shown on the screen. This should be illuminating. I always like to commit myself to paper before hearing what the other man thinks: a most salutary proceeding.

I ought perhaps to mention that I shall probably make frequent use of two terms, introduced nearly fifty years ago by the late Professor J. G. Adami of McGill University, Montreal, which I have found useful but which, regrettably, have not come into general use. The terms in question are "hylic" and "lepidic," meaning respectively a pulplike type of structure and a covering-cell type of structure without embryo implications. In the tumor field these terms are exceedingly useful, certainly more so than their corresponding nouns, hyloma (a pulp tumor) and lepidoma (a covering-cell tumor). Connective tissues and their tumors in general are hylic; so also are the tissues (and most of the tumors) of the central nervous system with the exception of the ependyma and choroid plexuses. Gliomas are usually hylic in structure, though they may be lepidic. The notochord is another example of a structure which, of epiblastic (or hypoblastic?) origin, becomes a wholly pulp structure (hylic) but the tumors of which are often frankly lepidic.

Well, with these introductory remarks we shall start on the material of our Seminar and see what we can make of it.

FIBROSARCOMA OF BREAST

CASE 1.—Contributed by Dr. J. M. Moore, Santa Rosa Hospital, San Antonio.

Specimen:—Left breast.

History:—This white woman, aged 56, had had a mass in the left breast for three to four years. There had been steady increase in size for six months without axillary adenopathy. Roentgenograms of the lumbodorsal spine, pelvis, and chest were negative for metastases. The breast was a large, fungating, ulcerated mass of about 12 pounds. It was fixed to the underlying tissues and measured 30 by 30 by 15 cm. On section, the breast seemed homogeneous throughout, consisting of firm, lobulated pink-gray tissue.

Diagnoses Submitted:—Cystosarcoma phyllodes, 14; fibrosarcoma, 6; neurogenic sarcoma, 5; neurofibrosarcoma, 4; dermatofibrosarcoma protuberans, 4; sarcoma, 2; adenofibrosarcoma, 1; intracanalicular sarcoma, 1; liposarcoma, 1; malignant mesenchymoma, 1.

Dr. Stewart: In a moment you will see the tumor on the screen—a huge, massive, lobulated tumor of the breast. Cystosarcoma phyllodes—well, it certainly was not cystic, and so far as I can see in many sections examined there are no epithelial elements anywhere. It is wholly a hylic or pulp tumor. Sarcoma, fibrosarcoma, neurogenic sarcoma, neurofibrosarcoma—

these can be more or less lumped together, except that they fall into two main types, one the straight fibrosarcoma, the other neurogenic; one derived from the stroma of the breast, the other of nervous origin. I hesitated between these two diagnoses but am inclined to favor the former. Another diagnosis submitted is adenofibrosarcoma. As I said, I fail to find any epithelium, which would rule that out. Intracanalicular sarcoma is unlikely for the same reason, nor do I think it is a liposarcoma; there is no evidence of differentiation into fat cells. Malignant mesenchymoma is really only a much undifferentiated sarcoma.

(Lantern slides) I shall briefly run over the histologic appearances of this case. Here we have three pictures of the tumor in the gross. The first is the deep aspect of the specimen after it has been removed; in the second the tumor has been cut into; and the third is the superficial aspect. You notice the strikingly lobulated character of the tumor. To the naked eye it closely resembles a fibroadenosarcomatous type of tumor, but when you examine it microscopically, you fail to find epithelium.

On the center screen we have the low power view of this tumor. It consisted of two separate parts. The tissue of one part is highly malignant—an anaplastic sarcoma, closely packed spindle-shaped cells of which you see a good example here with fine collagenous fibrillae between. On the right hand screen is a section stained with Masson's trichrome. One part is much more fibrous than the rest, with a vast amount of collagen, and you see in the lower half of the field a necrotizing area with a lot of telangiectatic vessels. The characters are even better shown with the higher power. Here is a section from the most cellular part; a very undifferentiated type of spindle-cell sarcoma. The next two sections are from more fibrous areas, but even here there are highly cellular areas with many mitoses and little intercellular collagenous matrix.

I should say this tumor may have started as a simple fibroma and later assumed in places a highly anaplastic type of structure; it became in fact a spindle-cell sarcoma, a fibrosarcoma of the stroma of the breast. Against its being neurogenic is the lack of regimentation of the nuclei. There is but little of the nuclear palisading which is so characteristic of many neurogenic sarcomas.

The patient is well to date and there is as yet no sign of recurrence. It is an interesting point that when these massive cystadenoid lesions, fibroadenomas of the breast of massive size, with a very bulky stroma, go malignant they rarely show epithelial, lepidic malignancy. It is nearly always a sarcomatous metamorphosis.

UNDIFFERENTIATED ADENOCARCINOMA OF BREAST

CASE 2.—Contributed by Dr. J. M. Moore, Santa Rosa Hospital, San Antonio.

Specimen:—Breast tumor.

History:—This white woman, aged 39, had noticed a painless, freely movable and nontender nodule in the upper quadrant of the right breast for one month. A radical mastectomy was performed. The nodule was found to be approximately 8 by 7.5 by 5.5 cm. and poorly demarcated from the surrounding breast tissue. On section, it was rather firm and grayish white with a few scattered yellowish fat-like flecks.

Diagnoses Submitted:—Reticulum-cell lymphosarcoma, 15; adenocarcinoma, undifferentiated, 12; Hodgkin's disease, 3; malignant melanoma, 3; lymphosarcoma, 2; myelosarcoma, 2; lymphoblastoma, 1; plasmacytoma, 1.

Dr. Stewart: This is another breast tumor, very cellular, with a history that it had been noticed for only one month. Now let us see the diagnoses. Reticulum-cell lymphosarcoma, Hodgkin's disease, and lymphosarcoma constitute the substantial majority, but I am glad to see that adenocarcinoma, undifferentiated, meets with considerable support, because I have no hesitation in regarding this as an epithelial tumor. It is one of those rapidly growing tumors to which the clinical term "acute cancer" is reasonably applicable. This is an acute cancer of breast, highly malignant and likely to disseminate by the blood stream or the lymphatics at an early stage. There is no evidence of a plasma cell constituent or of melanin formation. Of course, not all melanomas are pigment-forming all the time; sometimes they are completely devoid of pigment. I should therefore support the diagnosis of anaplastic or undifferentiated carcinoma.

(Lantern slides) This low power view does not help much except to show the surrounding fibroadipose tissue. There is a rather sharp edge to the lesion. Although there is a fair amount of stroma scattered all through it and it appears that there is a great deal of separation of the individual cells from one another, I think there is sufficient grouping in places to convince me of its epithelial nature. There are columns and groups of cells without intervening matrix, admittedly small cells, but very anaplastic carcinomas often closely simulate a sarcomatous growth.

Here we have the high power view. You see very well the formation of columns of cells without intervening intercellular substance. There is a minimal amount of stroma between the various cell columns, but in each column the cells are in immediate contact with their neighbors on either side. This next slide in many ways resembles a reticulum-cell sarcoma, but the central area, to my mind, is diagnostic of a highly anaplastic cuboidal-cell cancer. Here we

have a mucicarmine-stained section. It is only equivocally positive.

We now have further history of this case. The patient has developed a mass in the abdomen and is going down hill rapidly. I do not have the date when this breast was removed so that I cannot tell the exact interval, but the lesion was present only one month at the time it was removed. It obviously was a rapidly evolving tumor.

With such an anaplastic growth I thought it reasonable to find only equivocal mucicarmine staining. Likewise on staining for reticulum—there was reticulum present, of course, but it did not appear around the individual cells, only between the cell columns. I do not think that is in any way antagonistic to the view that I have taken that this is in fact primarily an epithelial tumor.

Dr. Raymond H. Rigdon, Galveston: Were there any metastases to the regional nodes?

Dr. Stewart: So far as I know there were no metastases to the regional nodes. Admittedly, carcinoma of the breast typically spreads first to the regional nodes, but the absence of lymph gland secondaries does not exclude carcinoma, although it might be regarded as a point in favor of sarcoma.

HODGKIN'S SARCOMA OF BLADDER

CASE 3:—Contributed by Dr. A. O. Severance, Baptist Memorial Hospital, San Antonio.

Specimen: Pelvic mass.

History:—This white man, aged 55, complained of frequency of urination. nocturia, and occasional hematuria for three years. He had lost 30 pounds in six months. He was hospitalized with pyrexia and cough. The liver was enlarged and tender. Nonprotein nitrogen measured 135 mg. per 100 cc. of blood. The red blood cell count was 2,160,000, hemoglobin was 5.5 Gm., and white blood cells numbered 9,950. During his hospital stay the patient ran a constant fever, reaching 104 F. on the seventh day. On the day of his death the nonprotein nitrogen level was 170 mg. per 100 cc. At autopsy the bladder was surrounded by gray, soft tissue. The ureters were hydronephrotic. Ulcerated lesions of the bladder mucosa extended into an enlarged, hard prostate.

Diagnoses Submitted:—Hodgkin's disease, 15; leiomyosarcoma, 11; sarcoma, 3; lymphosarcoma, 2; reticulum-cell sarcoma, 1; rhabdomyosarcoma, 1; carcinoma of bladder, 1; embryonal carcinoma, 1; malignant mesenchymoma, 1; megakaryocytic myeloid metaplasia, 1; histoplasmosis, 1.

Dr. Stewart: This case is of outstanding interest. We are likely to think of Hodgkin's disease as predominantly a disease of lymph glands, spleen, liver, and bone marrow. That, of course, envisages a sarcomatous type of structure. As you see, the greatest number favor the idea of Hodgkin's disease, eleven think it is an unstriped muscular tumor. The presence of the large multinucleated giant cells (which I think in this case are of the reticulum-cell type) would be in keeping with some varieties of myosarcoma. There are three votes for just "sarcoma," and then various others. Only one called it reticulum-cell sarcoma, but then Hodgkin's sarcoma belongs to this same group.

(Lantern slides) In this low power view, you can see that the muscular tissue of the bladder is still well preserved. I formed the impression, looking over the section as a whole, that the lesion is fundamentally in the interior of the bladder and is infiltrating outwards, that the boundary of the lesion is the muscle coat of the bladder, which is not grossly involved in the sarcomatous or Hodgkin process. I thought that this was most probably a Hodgkin type of sarcoma arising in the mucosa of the bladder rather than external to it or in the prostate, but it is difficult to be certain. In none of the sections that I examined did I find evidence of prostatic tissue. That, of course, does not completely exclude the possibility of such an origin.

Here is another instructive low power view, again showing infiltration of muscle. Most of this field, however, is straight sarcomatous tissue of Hodgkin type. Note the extent to which small lymphocytes are scattered all through it.

Here it is with the high power. In addition to the reticulum-cell tissue there are many lymphocytes, and I formed the opinion that the tumor cells are tending to differentiate into lymphocytes, which indeed is generally regarded as the normal evolution. Here in this field is a good example of Hodgkin giant cell. By the way, I always use the term Hodgkin giant cell because there is so much controversy about priority. In fact, in some of the pathology textbooks of the mid-Victorian era, in the 1870's, Willis and Nixon, for example, these giant cells of Hodgkin's disease are well described and even figured. Dorothy Reed's contribution was to make a detailed and careful study of these cells, but she did not discover them. Here are some beautiful examples. These cells are a feature of many reticulum-cell sarcomas but are particularly characteristic of Hodgkin's disease. Here, in this reticulin-stained section, we see a great wealth of reticulin deposition intervening more or less between almost every cell of the tumor.

There are one or two things about Hodgkin's disease, not wholly irrelevant to the present case, to which I should like to refer. Pyrexia was present during the patient's stay in the hospital, but apparently not of the Pel-Ebstein type. This extraordinary phenomenon demands much fuller investigation than it has received so far.

I should like to tell briefly of my experience with a case of this kind which I saw in Leeds thirty years or more ago. A well known citizen of Leeds devel-

oped Hodgkin's disease in later adult life. It was in the early days of radiotherapy, and the patient was sent for treatment to the Radium Institute in London. He presented the classical features of the disease, with extensive lymphadenopathy of a rather chronic type, slowly enlarging hard glands, one of which was excised and afforded histologic confirmation of the diagnosis. He responded well to treatment, the glands, as they so often do, melting away, and he made a good clinical recovery except that he was still rather anemic. He then developed Pel-Ebstein phenomena, and for nearly two years he was a typical example of this remarkable condition. He was a keen and intelligent man so I got him to keep his own temperature chart. He recorded his night and morning temperature faithfully for nearly two years.

The remissions of temperature usually lasted three or four weeks, and then there would be a pyrexial attack lasting about a week, with a daily range of three, four, or even five degrees of temperature. He then began to get anemic, as patients so often do from involvement of the bone marrow. He went back to London again for further radiotherapy. The treatment had a peculiar effect on the Pel-Ebstein phenomena, one which I have never seen in any other case and have never heard of. It brought down the whole temperature scale by four or five degrees Fahrenheit, so that the patient was running a subnormal temperature for three or four weeks and then, when he got his pyrexial spike, his temperature would rise to normal and range around normal, with an amplitude of several degrees. I should be interested to learn if anyone here has encountered a Pel-Ebstein case showing this curious phenomenon.

Dr. William W. Tribby, Memphis, Tenn.: What is your opinion of Jackson and Parker's classification of Hodgkin's disease: (1) paragranuloma, (2) granuloma, and (3) sarcoma?

Dr. Stewart: Many in Great Britain are using this terminology. I think that most cases of Hodgkin's disease start insidiously; the more chronic type of case is often slowly progressive, sometimes extending over many years, but, it would seem, invariably fatal. If the condition does not progress into fully developed Hodgkin's disease, then it was not Hodgkin's disease in the first instance. I do not use Jackson and Parker's terminology myself, though I read their series of papers with appreciation.

Most of us, I imagine, take the view that Hodgkin's disease starts as a reticulosis and ends as a reticulosarcoma. There is a gradual evolution, a continuous sequence, not a series of clear-cut entities. In this respect it may be compared with the various stages of peptic ulceration. We recognize acute, subacute, and chronic ulcers, while realizing that the whole process is one continuous sequence. I see no reason, therefore, why we should not recognize "stages" in Hodgkin's disease. Personally, I think it is potentially malignant *ab initio*, although it may develop slowly at first and gradually become more frankly neoplastic in its behavior. I think it is more inexorably fatal than most forms of malignant disease, even if the fatal termination is long delayed: it is certainly less amenable to treatment.

Dr. G. V. Miller, Galveston: Was there tumor present in places other than the pelvis at autopsy?

Dr. Stewart: Dr. Severance thinks that there was no evidence of disease elsewhere. Of course, if you get Hodgkin's disease with the lymph nodes as little involved as in this case, you have a hard time trying to justify calling it Hodgkin's. I remember having to do with a case of this kind in which Lord Moynihan removed an enlarged spleen. There were no large glands, but microscopic examination of the spleen showed the characteristic granulomatous structure of Hodgkin's disease scattered throughout its substance. That patient later developed classical Hodgkin's disease. Most pathologists, I think, recognize a special Hodgkin type of reticulum-cell sarcoma, and, of course, we do not call all reticulum-cell sarcomas Hodgkin's disease.

Dr. Robert Hausman, San Antonio: You mentioned that Hodgkin's disease is some form of reticulosarcoma. Could you say a few words about the terms reticulosarcomatosis, reticulosis, and reticuloendotheliosis (used for malignant diseases) and what the relation is between all these different forms which are supposed to belong in the large and confusing group of malignant lymphomas?

Dr. Stewart: The term reticulosis, as I understand and use it, is a term which stops short of malignancy unless so qualified. The fact is that there are changes which occur in the reticulum cells of lymph nodes and other organs which do not go beyond a reactive and innocent character, and to which the term reticulosis is usually and usefully applied, but too often we still lack the knowledge to enable us to determine which lesions will remain innocent and which will progress to malignancy. Two years ago, when the Pathological Society of Great Britain and Ireland visited Holland at the invitation of our Dutch colleagues, Professor Deelmann of Amsterdam gave a fine demonstration on giant follicular reticulosis. He had his own histologic criteria for determining, as far as possible, the prognostic outlook. If the germinal centers of these giant follicles were wholly or almost wholly composed of very vegetative cells, with but few large pale cells with small, shrunken, deeply staining nuclei, the prognosis was bad. If, however,

there were plenty of these large degenerate reticulum cells scattered through the germinal centers, a good prognosis was indicated. This whole problem wants further long and careful study.

I do not think we can be dogmatic about it at present. We can only go on general principles. If the general architecture of the gland is preserved and there is no evidence of undue cellular activity, even if the glands are enlarged and the follicles are enlarged, I do not think we should conclude that the condition is necessarily malignant. It is a blessing, in one sense, that Hodgkin's disease is so characteristic. You can make your diagnosis of Hodgkin's disease with considerable assurance in most cases, even in the very fibrous types and in cases with abundant eosinophilia. With the other reticuloses the diagnostic and prognostic problem may be exceedingly difficult.

METASTATIC TERATOMA OF TESTIS

CASE 4.—Contributed by Col. C. J. Lind, Brooke Army Hospital, Fort Sam Houston.

Specimen.—Lymph node.

History.—This young white man, aged 20, had a left orchiectomy for teratocarcinoma. One month later an intravenous pyelogram demonstrated a metastasis near the lower pole of the left kidney. This was removed with retroperitoneal nodes up to the renal pedicle. A preoperative chest roentgenogram was negative for metastasis. The specimen was a red globular mass 10 by 6 by 5 cm. weighing 250 Gm. Some areas were cystic, others rubbery.

Diagnoses Submitted.—Metastatic teratocarcinoma, 30; teratoma, retroperitoneal, 9.

Dr. Stewart: This is an interesting case, that of a man who had his testis removed for malignant teratoma and who later developed a tumor near the kidney. There is unanimity on the part of members of the Seminar, for fairly obvious reasons.

(Lantern slides) Here is a roentgenogram showing the site of the secondary deposit, with great distortion of the ureter, which is pushed out by this mass lying close to the spine. You see a well-encapsulated, soft-centered tumor.

Here we have some of the outstanding histologic features. If you will look at the central screen first, you will see there is a lot of cartilage present, some of it straightforward, almost normal looking hyalin cartilage; but here is a high power view showing that many of the cells have become giant size, and indeed that some of them are highly irregular. This islet of cartilage, then, is itself assuming malignant characteristics. You will remember, of course, that all of these so-called solid teratomas are malignant, however innocent they may look microscopically. They may consist of well differentiated foci of glandular epithelium like the epithelium in this field, of bundles of well-differentiated unstriped muscle, and may even show well-differentiated squamous-cell nests. They may be without obviously malignant tissue histologically, and yet you can be confident that the patient is going to die of the disease. Here in this field we have not only an islet of cartilage but also a squamous cell-nest that has become inflamed, with resulting loss of much of the epithelium.

Now in this case there is a lot of obviously malignant tissue as well. Here we have a beautiful mucin-forming epithelium, possibly respiratory, and here a little nodule of lymphoid tissue. This next field shows more characteristically the appearance of malignant tissue. There is tall columnar-cell epithelium, the type of teratomatous malignancy that is often regarded as neurogenic, which sometimes makes up the great bulk of the tumor. On the whole it is unusual for there to be much squamous epithelium in a tumor of this kind, in contradistinction to the benign cystic teratoma of the ovary.

In these metastases we find several nodules of tissue showing deep brown pigmentation—granular pigmentation, noniron reacting, and obviously melanin. I think there can be no doubt about that. But it does not look very neoplastic to me. It appears rather to be phagocytosed melanin, taken up by non-neoplastic phagocytic cells. If so, it must obviously come from a melanin-producing type of cell, and when we go back to the original sections of the primary tumor (which were not circulated to the members of the Seminar but which are now shown), we find one or two epithelial-lined spaces, the cells of which are heavily laden with melanin pigment. I believe this to be the pigment-forming tissue and that probably in the retroperitoneal metastasis also there was similar melanin-forming epithelium which did not happen to be present in the sections circulated. The melanin pigment which we see here has been taken up by phagocytic cells from adjacent neoplastic tissue, possibly corresponding to the pigmented layer of the retina.

The question of phagocytosis of melanin in melanomatous tumors generally is interesting. When a melanoma is deeply pigmented, I believe that frequently the number of tumor cells present may be small, the bulk of the pigment being contained within non-neoplastic phagocytes. And there is another even more important point. These melanin-containing phagocytes may travel via the lymphatics and become deposited in the regional lymph glands, where they may be mistaken for metastatic cancer cells. Perhaps this is not an important point, because if the melanin-containing phagocytes have metastasized, the chances are the malignant cells have metastasized also.

Dr. V. A. Stembridge, Galveston: In teratomas is it not the rule for only one element to metastasize?

Dr. Stewart: No, I do not agree, in the sense that the cells which metastasize are usually anaplastic and totipotent—capable of differentiating into a variety of tissues. The metastatic tumor may be undifferentiated or it may differentiate in several directions. I admit that chorionepithelioma of the testis (a teratomatous tumor, whether you can demonstrate it or not in a given case), when it metastasizes, usually reproduces the same type of structure—chorionepithelioma only. Indeed chorionepitheliomatous tumors of the testis may be unaccompanied by other teratomatous elements. This has its counterpart in struma ovarii, where evidence of the teratomatous nature of the tumor is usually lacking. It appears to be thyroid tissue only. Nobody, of course, makes a complete histologic examination of a large tumor, though Willis went a considerable way in this direction,[15] but even if you do not find any other tissue, the teratomatous nature of chorionepithelioma of the testis and of struma ovarii cannot be doubted.

You will remember, of course, the striking contrast between ovarian and testicular teratomas in respect to malignancy. The great majority of ovarian teratomas are benign. They take the form of a dermoid cyst, and the outstanding feature, apart from the cyst with its hair, possibly teeth, and sebaceous material, is the orderly arrangement of its tissues on section—epiblastic tissues on the surface, a covering of skin with its appendages, and underneath it nervous and glial tissue. Then comes the connective tissue element—fat, cartilage, and bone, and finally, deepest down, respiratory and gastrointestinal mucosa. Ovarian teratomas tend to observe a regular sequence of this kind, whereas in the testicular teratomas, which are almost invariably of the malignant type, there are seen not only areas of high anaplasia—frank histologic malignancy—but even any well-differentiated tissues which may be present are all jumbled together, epiblastic, mesoblastic, and hypoblastic. There is no orderly sequence.

I have seen only 1 case of simple teratoma in the testis, and that was in a boy of 9. The specimen is in the pathology museum at Leeds—a small tumor little more than an inch in diameter, its cystic interior filled with hair and sebaceous material and a lining of squamous epithelium. There was no histologically malignant tissue present. That boy has done well. You may be aware that in spaying young male horses teratomas of the testis are not infrequent, and I believe they are almost invariably of the well-differentiated, benign type. Similarly, when the benign type occurs in the human testis, it is usually in young boys.

You may ask why the ovary and testis should usually exhibit respectively a benign, well-differentiated type of teratoma and a highly anaplastic, or at least a highly malignant and metastasizing type. I think that it may be explained on the ground that ova grow and mature slowly, so that the number produced and shed via the genital tract is small indeed; whereas, spermatozoa are formed in "the utter prodigality of nature"—in countless millions. The testis, in other words, is naturally a rapidly proliferating organ, the ovary a slowly proliferating one.

Dr. F. C. Coleman, San Antonio: My section had atrophic testis present at the edge. Was this from primary tumor or from aberrant testis?

Dr. Stewart: That is an interesting point. I have never heard of metastatic deposits of teratoma of the testis showing differentiated seminiferous tubules. Do you suppose you received a slide from the primary tumor? I certainly saw nothing which suggested atrophic testis in the slides I examined.

Dr. H. W. Neidhardt, Beaumont: Is determination of prolan excretion of any value in classification of teratomas or in evaluating prognoses?

Dr. Stewart: I do not know.

Dr. J. R. Thomas, Corpus Christi: What types of nervous-system tumors do the neurogenic elements resemble?

Dr. Stewart: They resemble, as a rule, medulloepithelial elements—tall columnar epithelium comparable to the cells of the neural crest.

Dr. A. O. Severance, San Antonio: Do you consider a dermoid cyst with more than one germ layer as a teratoma, or must it be a solid tumor?

Dr. Stewart: A dermoid cyst of the ovary, as you know, starts in a small way presumably from a single totipotent cell. I have seen an occasional early case in the postmortem room when slicing the ovaries. There is a small solid sphere like a tiny pearl, and cut sections show it to be lined by stratified squamous epithelium with the interior completely occupied by stratum corneum. As the ovarian teratoma grows it gradually expands by the accumulation of more and more stratum corneum in its interior. By the time it has attained an inch or so in diameter there ceases to be an epithelial lining in most of the cyst: it is limited to one area. In a still larger teratoma, say several inches in diameter, sections from most of the wall show simply fibrous tissue with perhaps a granulation tissue lining containing large numbers of foreign body giant cells and often broken off bits of hair. All the teratoid elements are now limited to one area which projects knoblike into the interior and which usually has teeth and a bunch of hair growing from it as well. There is scope for histologic research here, on the earliest stages of ovarian teratomas—the tiny ones, only found by looking for them in a large series of ovaries, not only the kind that the surgeons re-

move in the operating theater but those obtained at autopsy.

I may perhaps bring in another irrelevance here. My former colleague, Dr. J. G. Thompson, in making a postmortem examination of a woman who had died in status asthmaticus, encountered a small but typical dermoid cyst of the ovary with hair, sebaceous glands, and so on. When he examined the sections, he found that they included a quantity of respiratory-type mucosa which showed the typical changes of asthma—infiltration wth eosinophils and numerous Curschmann's spirals and Charcot-Leyden crystals.[14]

Dr. Philip Flynn, Austin: Do you advise removal of the other ovary if a dermoid is present in one ovary?

Dr. Stewart: As a pathologist I should say "no." Only once have I seen a case of bilateral ovarian dermoids, and as the vast majority of these tumors are benign, I see no occasion for bilateral removal if one ovary only is the seat of a dermoid cyst.

MALIGNANT SYNOVIOMA

CASE 5.—Contributed by Col. C. J. Lind, Brooke Army Hospital, Fort Sam Houston.

Specimen.—Tumor of right ulna.

History.—This white man, aged 22, noted pain and ulnar swelling in his right wrist without past injury. In three weeks the swelling became larger and more tender and the lower ulna with associated mass was excised. Lymph nodes from both axillae also were subjected to biopsy. The specimen was a globular mass 4 by 4 by 3 cm. closely attached to but not involving bone. The tumor was smooth, grayish white, glistening, and partially encapsulated. The surrounding soft tissues were invaded by the growth. It sectioned with a cartilaginous resistance.

Diagnoses Submitted.—Chondrosarcoma, 21; synovioma, 6; myxosarcoma, 3; chondromyosarcoma, 2; mixed tumor, 2; fibrochondromyxosarcoma, 1; extra osseous chondrosarcoma, 1; lipomyxosarcoma, 1; angiosarcoma, 1; malignant schwannoma, 1.

Dr. Stewart: This is a difficult case. A preponderance of opinion supports chondrosarcoma. I take it we all agree that it is a malignant tumor. After chondrosarcoma, synovioma receives the greatest number of votes, but chondrosarcoma has a clear majority over all the others combined. I spent a long time looking at those sections and finally decided in favor of malignant synovioma.

There are fashions in pathology as there are fashions in medicine and surgery, and it is the fashion at present to diagnose synovioma with considerable facility. Those of you who are interested will find a paper in a recent number of the *British Journal of Surgery* by C. J. E. Wright[18] incorporating all the cases of benign synovioma which occurred in Leeds during my period of forty years there. This is followed by a paper on malignant synovioma in the *Journal of Pathology and Bacteriology* covering the same period.[19] It is interesting that in this second series the diagnosis has been made with any frequency only in the last ten years. When Wright and I were going through our material together, we selected from among the tumors previously diagnosed as spindle-cell sarcoma, angiosarcoma, and the like a fair number of cases which we then decided should be regarded as synovioma. An outstanding feature of synovioma is in its extraordinary protean character. It may be largely or wholly sarcomatous, that is, hylic; or it may be frankly carcinomatous, at least in fat, with areas of tall columnar epithelial cells, lepidic.

My diagnosis in this case was a malignant synovioma of the wrist. One of the important points is that there are secondaries in the axillary glands. My experience of chondrosarcoma is that, like osteosar-

FIG. 1. Case 1. Fibrosarcoma of breast. One of the more fibrous tumor lobules, with abundant intercellular collagen and some degree of nuclear palisading in places. x 105.

FIG. 2. Case 1. One of the more cellular tumor lobules, a frank spindle-cell sarcoma with minimal intercellular fibrosis. x 475.

FIG. 3. Case 2. Anaplastic spheroidal-cell carcinoma of breast showing columns of spheroidal, or more often cuboidal, cells. Fibrous stroma is minimal in most of the field. x 475.

FIG. 4. Case 3. Pelvic tumor (prostatic [?] vesical [?]) showing a reticulosarcomatous structure of Hodgkin type, with numerous lymphocytes and several "Hodgkin" giant cells. x 475.

FIG. 5. Case 3. Section stained for reticulin, showing an extraordinarily rich network of reticulin fibers. x 105.

FIG. 6. Case 4. Retroperitoneal secondary deposit of malignant teratoma showing an islet of hyaline cartilage and, immediately above it, the keratinous core of a squamous cell-nest, the peripheral portion of which has been destroyed by an inflammatory reaction. x 30.

FIG. 7. Case 4. From a frankly malignant area, showing an adenocarcinomatous type of structure, probably hypoblastic. x 105.

FIG. 8. Case 6. Reticulum-cell sarcoma of bone. A tumor of highly cellular anaplastic tissue of small round-cell type broken up by densely collagenous septums. x 105.

FIG. 9. Case 7. Intracystic papillary tumor of the ovary closely resembling a villous papilloma of the urinary bladder (Brenner tumor [?]). x 105.

FIG. 10. Case 8. Chorionic carcinoma uteri. Invasion of the myometrium by malignant tissue of lepidic type. x 105.

FIG. 11. Case 8. Unstriped uterine muscle seen in the lower half of the field, broken up by highly cellular tumor tissue, including nonsyncytial giant cells. x 475.

FIG. 12. Case 9. Carcinoid tumor (argentaffinoma) of the lower ileum, showing groups of uniform small epithelial-type cells in the interstices of a fibrous stroma. x 105.

FIG. 13. Case 10. Arrhenoblastoma of ovary, showing obviously lepidic characteristics and great cellularity. x 105.

FIG. 14. Case 10. Arrhenoblastoma of ovary. Higher power view of a field in which spindle cells predominate. x 475.

FIG. 15. Case 11. Sweat-gland adenoma of skin, largely cystic. x 105.

FIG. 16. Case 12. Virilizing tumor of adrenal cortex. There are many neoplastic cells with giant nuclei. x 105.

FIG. 17. Case 13. Malignant synovioma of elbow. The tumor is partly lepidic of aspect. x 475.

FIG. 18. Case 13. Secondary deposits in liver, showing an appearance in places suggestive of neuroblastoma. x 105.

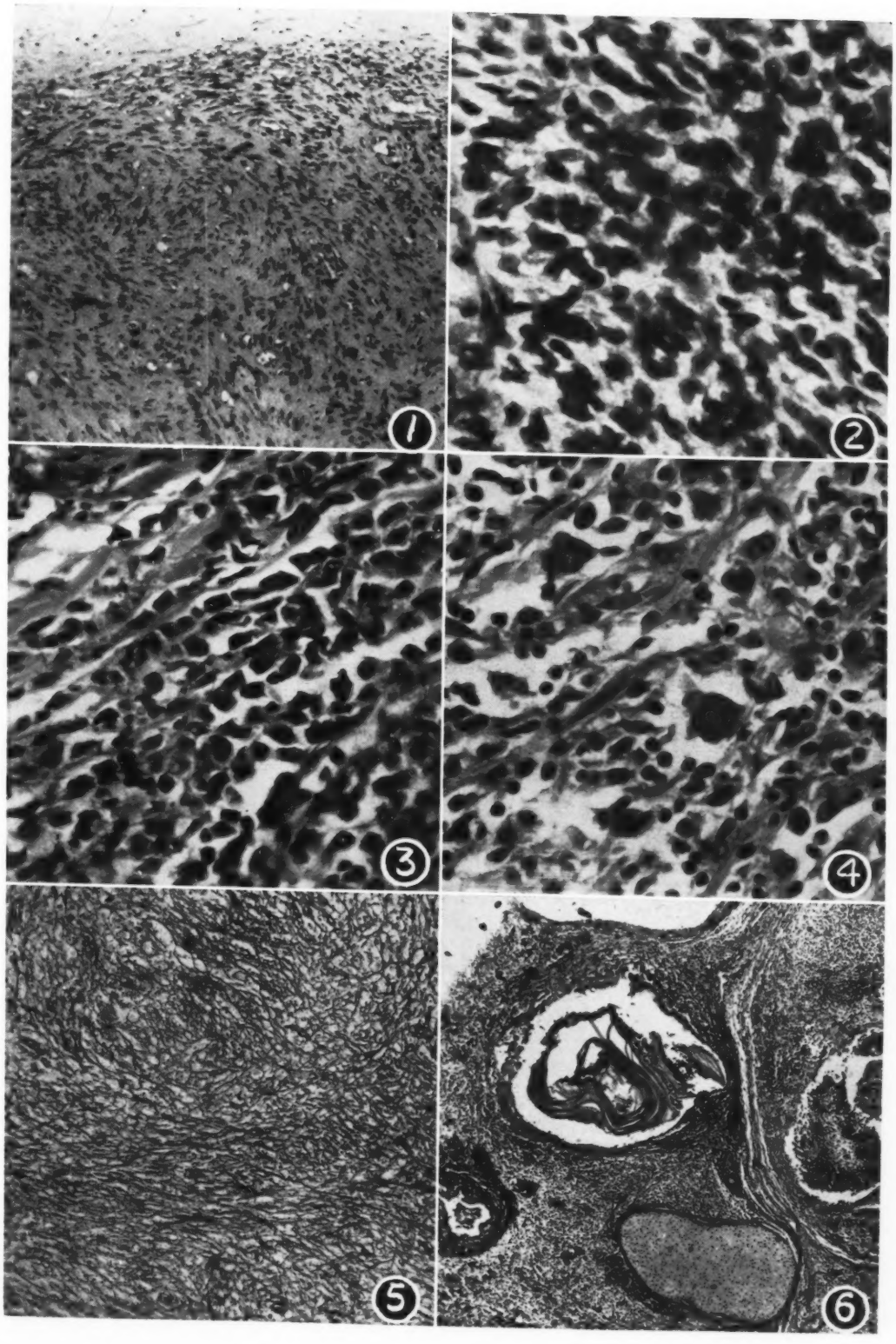
FIG. 19. Case 15. Carcinoma of lung (?), showing carcinomatous infiltration of the pericardium. x 105.

FIG. 20. Case 15. A group of cancer cells in fluid obtained by pericardial paracentesis. x 475.

FIG. 21. Case 16. Duct-cell carcinoma of pancreas invading liver. x 105.

FIG. 22. Case 17. Well-differentiated thyroid tissue, not obviously malignant, in a cervical lymph node. x 30.

FIG. 23. Case 18. Hürthle-cell adenoma of thyroid. x 475.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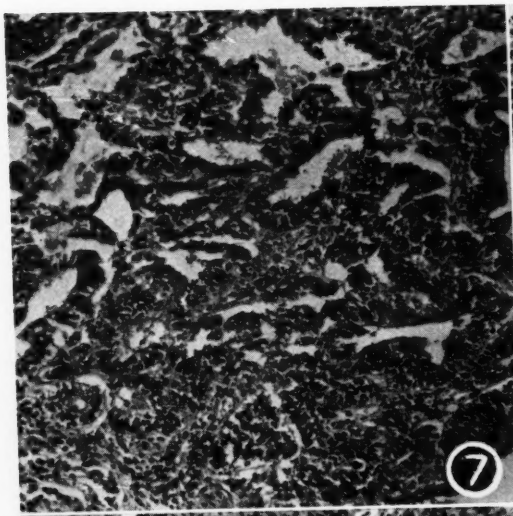
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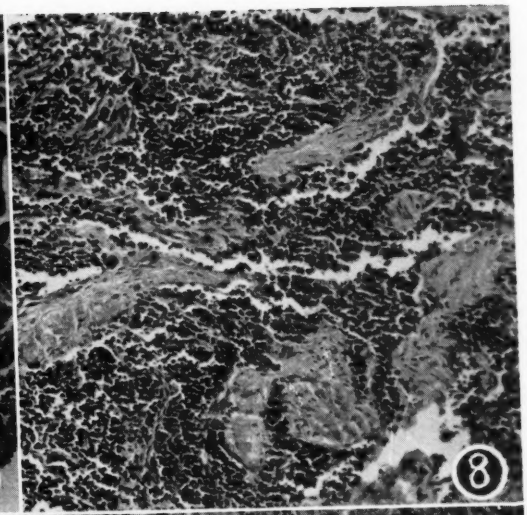
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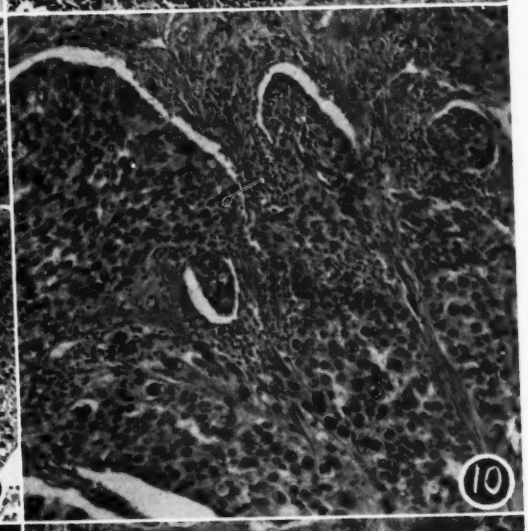
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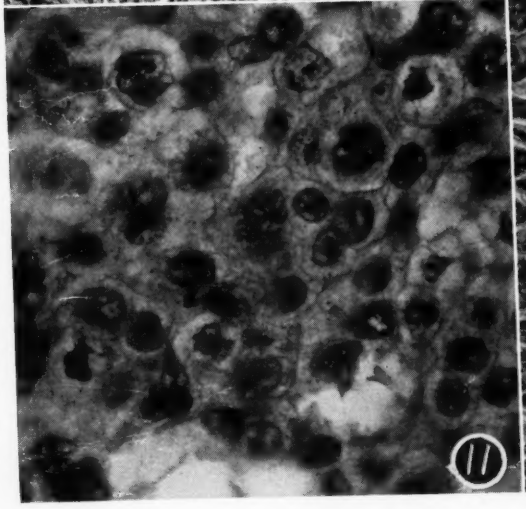
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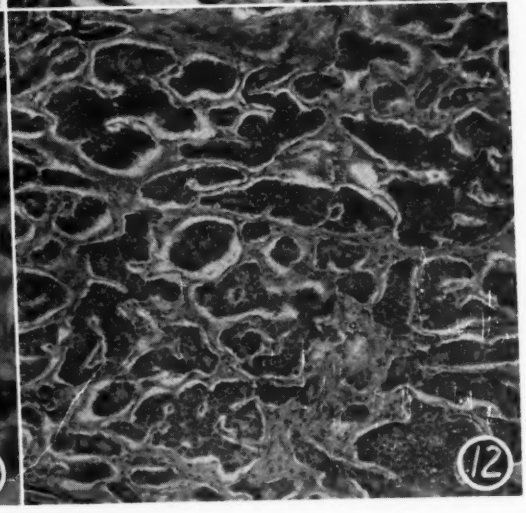
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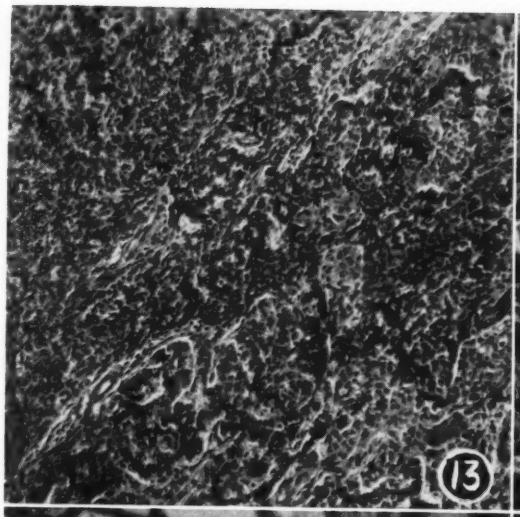
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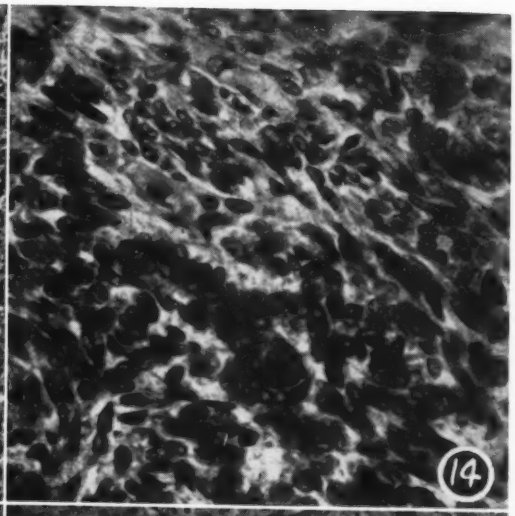
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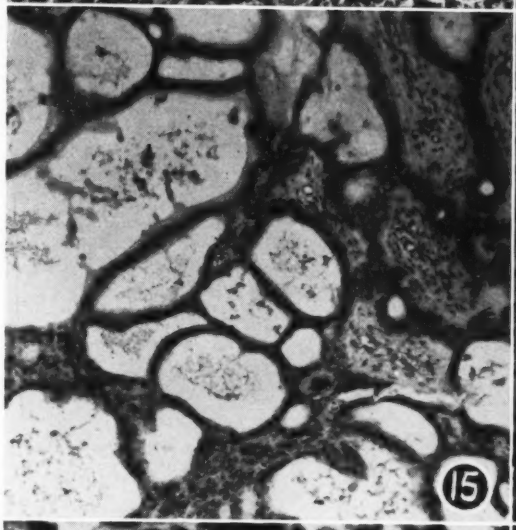
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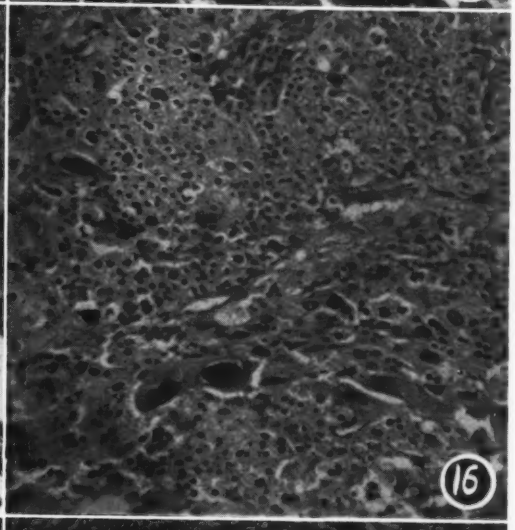
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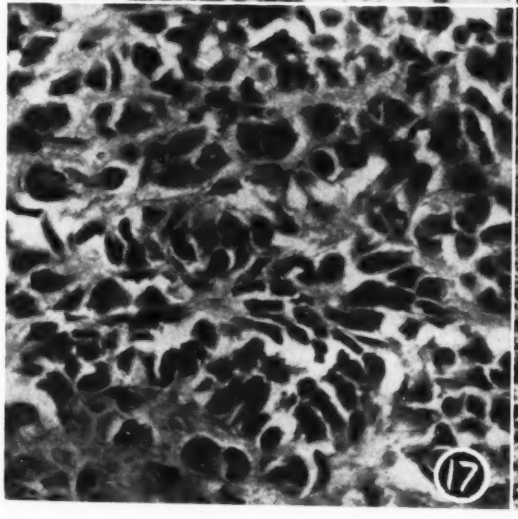
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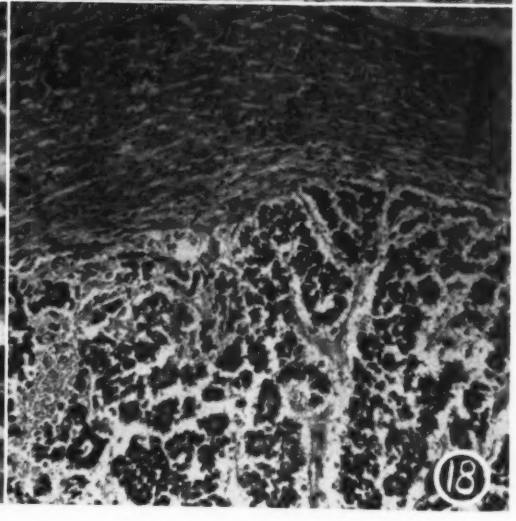
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coma, it is preeminently a tumor which disseminates by the blood stream and only rarely by the lymphatics. Here we have a case where there were big secondaries in the axillary glands, in my view strongly favoring synovioma as against chondrosarcoma.[18]

(Lantern slides) Here is the tumor. It lay in relation to the bone but did not involve it except apparently secondarily. Here we have the tissue shown microscopically—columns of cells, at the first glimpse of lepidic aspect, but much of it of myxoid type. This next slide is stained with mucicarmine, but with negative result.

Here is a slide showing a considerable capsule with some striped muscle beyond it, and here is a high power view presenting the characteristics of a myxosarcoma. Here is a more fibrous portion—fibrosarcomatous. I could not satisfy myself that there was any real metachromatic staining. Here is one slide stained with Masson's trichrome—a good section. Abundant collagenous fibers are present at the periphery, while the tumor itself is again showing some degree of lepidic character—columns of cells with an intervening matrix, not at all like the homogeneous matrix of cartilage. Here is a mucin-stained section not, perhaps, showing a very characteristic reaction, but you notice how the outpouring of that mucinous material has led to an appearance almost of acinar or glandular type. Here is a secondary in an axillary lymph gland and here is the normal lymphoid tissue. One of the outstanding features of this case, by the way, is the extraordinary degree of encapsulation. Even the secondary deposits in the axillary glands are walled off by a broad, densely fibrous capsule. There must have been a tremendously stimulating effect by the products of this tumor to lead to such an amount of fibroblastic proliferation and collagenous deposition.

I am very uncertain about the diagnosis. Even with the aid of Rupert Willis' magnum opus, the "Pathology of Tumours,"[16] I failed to reach finality.

RETICULUM-CELL SARCOMA OF BONE

CASE 6.—Contributed by Col. C. J. Lind, Brooke Army Hospital, Fort Sam Houston.

Specimen.—Lower extremity.

History.—This white boy, aged 18, developed pain and swelling of his left leg in the region of the fibula. Roentgen examination was suggestive of osteogenic sarcoma. A midthigh amputation was performed. Grossly a soft, white tumor mass was noted to involve the head of the fibula and surrounding soft tissues, and to extend distally for approximately 14 cm.

Diagnoses Submitted.—Ewing's tumor, 28; synovioma, 3; reticulum-cell sarcoma, 2; osteogenic sarcoma, 1; periosteal sarcoma, 1; neuroepithelioma (malignant), 1; neuroblastoma, metastases, 1; sympathicoblastoma, metastatic, origin unknown, 1; diffuse malignant endothelioma, 1.

Dr. Stewart: This is another interesting case. There is an impressive preponderance of opinion in favor of Ewing's tumor, whatever that may be. Then there are three for synovioma and two for reticulum cell sarcoma. As I have already mentioned, synovioma is at present a fashionable diagnosis. There are many other diagnoses for this case, including neuroblastoma metastases.

(Lantern slides) Here is a striking appearance. This fibula shows not only little bony thickening, but two different types of bony reaction. Here, on the inner side of the fibula, there is bony lamination, the lamellae lying parallel with the surface of the bone. On the opposite side is the radiating structure that occurs in some forms of osteogenic sarcoma and also sometimes in secondary deposits of neuroblastoma. The comparative frequency of secondary deposits of neuroblastoma in bone—and other reasons—has caused Professor Willis to take the view that most of the alleged cases of Ewing's tumor are in fact cases of secondary neuroblastoma. The radiating structure here is well shown, but so also is the laminated, so-called onion-skin type of change. It is not striking, perhaps, but it is undoubtedly there.

The tumor is highly cellular. It is much undifferentiated, consisting of aggregations of small round and oval cells with fibrous septums between. Here is the highly cellular area, and here are big fibrous septums breaking it up. Here is a high power view showing the tumor cells lying in distinct columns with occasional lumens suggesting, as one of your number feels, a possible vascular origin. Here is something much like a lumen, but no red cells can be seen in it, though that would not exclude the possibility of its being a hemangioendothelioma. These are solid masses, but the appearance does fit in with what has been described as Ewing's sarcoma. I have made a diagnosis of Ewing's tumor on a few occasions only. Two clinical points in favor of this diagnosis in the present instance are (1) that the patient is a young subject, still in his teens, and (2) that it is a painful lesion. There remains the controversial issue. Is Ewing's sarcoma a separate entity and different, therefore, from reticulum-cell sarcoma of bone? I have made the diagnosis of reticulum-cell sarcoma of bone on two or three occasions, but I am still in a quandary about Ewing's sarcoma. Clinically it would seem to be an entity, but its histogenesis remains an unsolved problem. Professor Willis takes the view, as I say, that many of the alleged cases are not primary tumors at all, but secondary to adrenal or other neuroblastomas. In this instance I can see nothing remotely resembling neuroblastic rosettes.

Here is the section showing the result of reticulum staining. There is plenty of reticulum present, but it is perhaps in rather big laminated strands and little of it is in the more cellular areas. Here is the Masson's trichrome section, showing a cellular, anaplastic tumor with only small amounts of collagenous connective tissue which might really be part of the original tissue infiltrated by the growth. Although I do not feel at all confident about this case, my final but still tentative opinion is that it is a reticulum-cell sarcoma.

Dr. A. O. Severance, San Antonio: Do you agree with Willis' theory?

Dr. Stewart: I think that metastatic neuroblastoma can produce a tumor which, clinically and in the gross, might well be diagnosed as Ewing's sarcoma. But we do not know what a Ewing's sarcoma is, do we? Is it a reticulum-cell sarcoma? Willis will not have that. He says that what Ewing described is not a reticulum-cell sarcoma although he believes that a reticulum-cell sarcoma of bone does occur. It is a pity this one was not on a couple of years ago when Professor Willis conducted the Seminar!

BRENNER TUMOR OF OVARY(?)
(Urinary-Tract-Type Papilloma)

CASE 7.—Contributed by Dr. J. M. Moore, Santa Rosa Hospital, San Antonio.

Specimen.—Right ovarian tumor.

History.—This white woman, aged 54, was in good health and menstruated regularly up to the time the tumor was removed, but did not menstruate afterward. The tumor was cystic and 23 cm. in diameter. It was biloculate, the larger cyst being 15 cm. in diameter. Both were filled with pink watery fluid. Within the large cyst was a single papillary mass 10 cm. in diameter. Adjacent to this were multiple smaller cysts.

Diagnoses Submitted.—Granulosa-cell tumor, 13; papillary carcinoma, 9; transitional-cell papilloma, 5; Brenner's tumor, 4; papillary serous cystadenocarcinoma, 2; adrenal tumor, 2; papilloma, 2; papillary serous cystadenoma, 1; papilloma arising in teratoma, 1; teratoma, 1.

Dr. Stewart: This is an extraordinary tumor of the ovary and another difficult case. I have never seen anything quite like it. I was prepared to go for a Brenner at first sight—four others took that view—but it is a cystic tumor with papillomatous ingrowths and virtually indistinguishable from a villous papilloma of the urinary tract. Somebody has mentioned urinary tract structure, though that is not down in the list. If it had been solid and not cystic, I think I should have accepted it as a Brenner tumor. There remains the possibility of the one-sided development of a teratoma. That is perhaps going a bit far, but, after all, we have the example of typical thyroid tissue completely monopolizing the histologic picture in some ovarian teratomas, and everybody agrees that such cases are teratomatous.

(Lantern slides) Here is the appearance at low power. It is just like a villous papilloma, with its narrow core of connective tissue running through the center of these papillary processes and the epithelium differentiating slightly as it passes to the surface: nowhere does it go on to keratinization. Here is the high power view, showing the basement membrane with the basal columnar type of epithelium just as you see it at the base of the urinary-tract epithelium in villous papillomas.

Frankly, I do not know what to say about this. It is a type of ovarian tumor with which I am unfamiliar. I do not think it can be a Brenner's tumor. It is, in fact, a big papillomatous mass growing into the interior of a cyst. I think a teratomatous origin is possible. The after-history is that so far there has been no evidence of metastasis and no recurrence. It is a well-differentiated tumor, certainly, but you know with what suspicions villous papillomas of the urinary tract are regarded. Some of them no doubt are curable by excision or other radical form of treatment; others recur, may even disseminate to other points on the bladder wall. They can start in the renal pelvis and later become implanted in the mucous membrane of both ureter and bladder.

Audience Member: Could this be metastasis from a urinary carcinoma?

Dr. Stewart: That does not seem a likely possibility. We expect metastases to be more anaplastic than the primary, but not invariably, of course.

Audience Member: What is your name for this?

Dr. Stewart: I called it a villous papilloma of urinary-tract type, but that is just a morphologic name for it. I gave up my original "Brenner" view.

Audience Member: Would you not call this tumor a hamartomatous transitional-cell papilloma?

Dr. Stewart: Well, it is a genuine tumor. It is certainly neoplastic. I suppose by hamartomatous neoplasm you mean a tumor arising in ectopic urinary-tract tissue. One is familiar with gastrointestinal ectopia—pancreatic and so on—and with the term hamartoma in relation to abnormal developmental blending of tissues generally. Of course, the ovaries and the urinary tract are both derived from the intermediate cell mass developmentally, so that there is this histogenetic connection between them. It is conceivable, therefore, that you might have a villous papillomatous tumor of bladder type occurring ectopically in the ovary. I have never encountered nor, I think, read of such a condition.

(Intermission.)

Col. C. J. Lind, Brooke Army Hospital: We all have felt something is missing, for excellent as every-

thing is, we still have not heard from Dr. B. F. Stout. This is really as much his meeting as it is anyone's, and if you were to name someone most responsible for support of these meetings, it would be Dr. Stout. It is a pleasure to introduce to you your old friend, Dr. B. F. Stout.

Dr. B. F. Stout, San Antonio: Ladies and gentlemen, our medical profession of Texas and pathologists in particular have had an unusual honor this past year. I refer to the election for the first time of a pathologist as President of the Texas Medical Association. I want Dr. T. C. Terrell of Fort Worth to stand so that we can give him proper recognition as President-Elect of the Texas Medical Association. (Applause)

CHORIONEPITHELIOMA

CASE 8.—Contributed by Dr. A. O. Severance, Baptist Memorial Hospital, San Antonio.

Specimen.—Uterine tumor.

History.—This white woman, aged 26, para 6, gravida 9, miscarried spontaneously after four months of pregnancy. One month later placenta-like tissue was removed by curettage for metrorrhagia. The specimen was not studied. The patient was hospitalized for continued bleeding and anemia. The uterus, left tube, and ovary were removed. In the uterine cavity was a fungating mass 3 cm. in diameter, firmly attached to the fundus and invading the musculature. On the anterior surface of the fundus was an indistinct, slightly protruding brownish area 9 mm. in diameter, which on section was hemorrhagic.

Diagnoses Submitted.—Choriocarcinoma, 34; endometrial sarcoma, 1; malignant adenoacanthoma, 1; malignant hydatidiform mole, 1; malignant mole (probable Hertig 3), 1; placental remnant, trophoblastic invasion, 1.

Dr. Stewart: There is general agreement. Adenoacanthoma—well, I do not see any evidence of squamous development. It was to my mind emphatically the mixture of multinucleated syncytial cells and solitary Langhans' cells which we expect to see in chorionic carcinoma. Malignant hydatidiform mole—this is much the same thing, but there is no attempt to form hydatid vesicles as far as I can see. It is a highly anaplastic tumor. I am well aware of the intimate relation to hydatidiform mole, of course. I know that in molar pregnancy the incidence of chorionepithelioma is much higher than in normal pregnancy and that a case not infrequently passes through the stages of hydatidiform mole and invasive mole before finally becoming a metastasizing chorionepithelioma.

(Lantern slides) Here is a color photograph of the gross specimen, the uterus after removal, and here is the interior. Here is the uterus again and here the ovary at one end, and the broad ligament, and there are some nodules which are distinctly hemorrhagic and look nasty. There on the other side you see a nodule of tumor also. Now for the histology. In this field the tumor looks frankly lepidic—chorionic carcinoma (the name is fully justified in a case of this kind), and here it is infiltrating lymph—or blood—vascular spaces. Here is a high power view showing mitotic figures scattered through it, and often tumor cells are seen lying within vascular spaces, probably blood-vascular.

Here we have some good photographs. This one in the center is magnificent because it shows the pale individual Langhans' cells so clearly. Here also we have a huge syncytial mass, the nuclei in which always tend to be much more deeply staining, not vesicular like those in the Langhans' cell. And here is the high power view of one end of this great plasmodial mass. Here is a bit which is highly dedifferentiated, with mitotic figures, a highly malignant tumor indeed. This is another section showing the intermediate type of cell, highly malignant-looking cells with big lobulated or multiple nuclei. These are the cells which tend to infiltrate more than either of the other two into the uterine muscle.

We now have some further information about this case. The patient returned two or three weeks after the operation complaining of further vaginal bleeding. On examination there were found to be several metastatic deposits in the vaginal wall. These were cauterized. The patient died some weeks later.

Chorionepithelioma has been regarded as one of the most highly malignant of all tumors, and this is no doubt true in most instances. Yet there are cases on record in which cure apparently has been effected, even after the development of vaginal or pulmonary metastases or both. My old chief, the late Professor John H. Teacher, in his day one of our chief authorities on the pathology of chorionepithelioma, held that there was definite evidence to show that individual secondary deposits of chorionepithelioma in the lungs were capable of undergoing a process of spontaneous healing. In a fatal case of chorionepithelioma uteri Teacher found clear evidence of this. Many of the secondary deposits in the lungs were totally necrotic and encapsulated in dense fibrous tissue which must have been there for some time. Often no living tissue was recognizable under the microscope. The patient died of the disease, of course, and there were living active secondaries in the lungs and elsewhere. Nonetheless, the possibility for spontaneous cure was there. Chorionepithelioma does not possess blood vessels of its own; it grows into and along the blood vessels of the part, and no doubt gets its nourishment and its oxygen directly from its host's blood.

During my recent visit to Melbourne I attended a meeting of gynecologists where 8 cases of chorionepithelioma were described and discussed. In 4 or 5

of these cases "vaginal metastases" were present and had been removed with the primary growth; yet most of the patients were alive and apparently well, some of them over a period of a year or two, I think.

I would mention here again what I have already referred to, namely, the occurrence of chorionepithelioma of the testis as an individual tumor. This must always be regarded as teratomatous in nature, as indicated by the occasional occurrence of chorionepitheliomatous tissue in a teratoma of the testis. Willis is profoundly skeptical of the occurrence of true chorionepithelioma in the testis. I can say only that I have seen at least 1 case of testicular teratoma in which an area of hemorrhage and necrosis was associated with tissue composed of syncytial masses and Langhans-type cells indistinguishable from those of chorionepithelioma.

Dr. B. F. Stout, San Antonio: How common is chorionepithelioma?

Dr. Stewart: These 8 cases which I heard described in Melbourne had occurred within a period of a few years. In Leeds, the disease seems to be rare. I might mention here that Teacher was conservative in making a diagnosis of chorionepithelioma. You can certainly have an extraordinary degree of proliferative activity of the fetal trophoblast without the case being genuinely malignant, and I think it is conceivable that some of those cases in Melbourne should be regarded as more in the nature of unduly invasive trophoblast than genuine neoplasms.

Dr. A. O. Severance, San Antonio: At a previous Seminar, Dr. A. P. Stout of New York expressed the view that if you saw well-formed chorionic villi, no matter how active they looked, they were benign and you must call the tumor a hydatidiform mole. Then a case showed up here at Brooke Army Hospital in which the patient died with lung metastasis after villi had been seen. I wonder what your thoughts are regarding villi and chorionepithelioma.

Dr. Stewart: Did it show chorionic villi in the metastases?

Dr. A. O. Severance: Chorionepithelioma in the lung.

Dr. Stewart: Yes, but did it show differentiation into villi with a genuine myxoid stroma? No? I think that, in general, if you have definite formation of villi with a myxoid stroma (this was one of Teacher's main points) you could allow for a great degree of proliferation of the fetal trophoblast without its being frankly malignant. Yes, I think the presence of recognizable vesicular mole villi is a contraindication to an emphatic diagnosis of malignancy. You can certainly get permeation of vessels by what appears to be benign vesicular mole, and of course trophoblastic cells have been demonstrated in the lungs in women dying in the later stages of pregnancy. After all, it is the normal function of the fetal trophoblast to erode the maternal sinuses of the uterus, leaving a delicate semipermeable membrane between the two blood streams, but it is certain that trophoblastic cells usually get into the maternal circulation.

MALIGNANT CARCINOID OF ILEUM

CASE 9.—Contributed by Dr. Philip T. Flynn, Austin.

Specimen.—Ileum.

History.—This white man, aged 61, had an appendectomy in 1947, when a diagnosis of an inoperable carcinoma of the small bowel was made. The patient had obstructive bouts until 1950, when 100 cm. of terminal ileum was resected. This showed scarring, hypertrophy, and fibrosis. In the lumen were more than 50 circumscribed yellow slightly polypoid tumors, principally in the submucosa, covered by intact mucosa. A few had penetrated through the serosa to cause adhesions. Most were 5 to 15 mm. in diameter, the largest 25 mm. No annularity or narrowing of the lumen was noted. Of 33 mesenteric nodes 8 had microscopic tumor.

Diagnoses Submitted.—All carcinoid.

Dr. Stewart: This is an interesting case, not only on account of its carcinoid character but because of a remarkable foreign-body reactive change which, I am afraid, was shown in only about a quarter of the sections sent out to members of the Seminar. There is, as you see, complete unanimity as to the diagnosis, the only one in the whole series of Seminar cases. The microscopic appearances are certainly classical.

(Lantern slides) These little columns of epithelial-type cell, derived from the so-called Kultschitzky cells of the small intestine and occasionally occurring also in the stomach and large intestine, are uniform in character, showing no great anaplasia, no irregular cells, and with hardly a mitotic figure. All this is in keeping with the fact that most of these tumors are slowly growing, in the appendix perhaps even more than in the small intestine. They are often found casually in the examination of an appendix which has been removed by the surgeon because of an attack of real or supposed appendicitis. Their yellow color to the naked eye is highly characteristic, and they contain in the basal portion of the cell the abundant coarse granules which stain bright pink with eosin and give a positive reaction with silver stains; hence the term "argentaffinoma," which is applied to them. There is no sign of mitosis here. Some fields show a more abundant matrix, and here is one which shows the formation of genuine lumens. Such cells still give the argentaffin reaction.

I have said these tumors are slowly growing, yet they can prove to be frankly malignant, with both lymphatic and blood-borne metastasis. The number

of cases which metastasize is considerable, particularly when the primary or primaries are in the ileum, but metastasis is often long delayed. Metastasis is chiefly to the regional lymph nodes, but secondaries have been reported in the liver and elsewhere. This case involved the lower ileum and was multiple, more than 50 tumors being present. This is by no means uncommon in the ileum, although even here there can be solitary tumors, for example on the ileocolic valve, of which I have seen 2 instances. Carcinoids of the appendix are usually but not invariably single. A number of cases now have been reported in the rectum. Cuthbert Dukes,[3] pathologist to St. Mark's Hospital, London, in his series of 203 cases of cancer of the anorectal region removed surgically, found no less than 9 cases in which, in addition to the cancer, an argentaffin tumor was present in the anorectal region or lower third of the rectum. The term carcinoid is a convenient term, provided it is not regarded as indicating benignancy. It seems, however, that these tumors may be present for years without undergoing metastasis.

The chief sites, then, are the appendix and small intestines, and after that the rectum. There have been 1 or 2 cases reported in the stomach, and I have myself reported 1 in a Meckel's diverticulum.[10] We have still to see one at the upper end of the esophagus, arising from one of the upper cardiac glands of Schaffer, those (usually bilateral) patches of ectopic gastric mucosa which occur so commonly at the level of the cricoid cartilage and are so often missed or regarded merely as superficial ulcers.

This patient had had the appendix removed three or four years ago. Here, external to the portion of excised small intestine, there is a granulomatous lesion with giant cells of typical multinucleated foreign-body type, with even a pseudofollicular type of structure. On careful inspection one sees there are scattered pale small bluish particles, the foreign bodies which are responsible for this reaction. Undoubtedly it is these talc particles, dating from the previous operation, which have set up this granulomatous formation. This is, of course, a well recognized occurrence nowadays and should not mystify anybody.

I was particularly interested to see that one member of the Seminar made the diagnosis that these were suture materials, because this is a subject in which I have been interested for more than forty years. I read a paper at the first meeting of the Pathological Society of Great Britain and Ireland in 1910[7] on the use of polarized light in the detection and investigation of suture materials embedded in the tissues.[8] Ever since I first started working with polarized light in 1912 I have kept a microscope on my bench permanently fitted with Nicol's prisms so that every specimen likely to show a birefringent substance can be examined forthwith. In the present case, however, these are not suture materials but talc particles. It is true that many of the suture materials used by the surgeon remain for a long time in the tissues. I have seen silk, easily recognizable with polarized light, which had been present in the tissues for many years, and residual particles of silkworm gut too. Catgut, on the other hand, is rapidly absorbed and does not retain its optical activity, which is slight at best, for more than a few weeks. Silkworm gut, which is used for skin sutures, is of particular interest. When a silkworm gut suture is removed from the skin at the end of a few days, it has lost its original beautiful polish and has become pink staining, rough, and eroded, and along its tract in the tissues there remain numerous little particles of suture material which will stay in situ for years, retaining their optical activity.

Dr. Albert W. Hartman, San Antonio: Do you believe that carcinoid tumors arising in the rectum behave in a more malignant manner than those arising elsewhere?

Dr. Stewart: From personal experience I am unable to answer that question, but I believe those arising in the intestine, large or small, have a worse prognosis than those arising in the appendix. They all develop slowly at first, but later metastasize, first to the regional lymph nodes and then to the liver and elsewhere. In this case it is reported that there were metastatic deposits in the regional lymph nodes. There were, in fact, about 50 circumscribed, yellow, polypoidal tumors in the resected portion of ileum, a few of which appeared to have penetrated the wall of the gut. Of 33 mesenteric nodes examined, 8 showed microscopic tumor. I have no personal experience with rectal cases, but from what I have read, they seem to resemble small intestine rather than appendix cases. I once reported a case of carcinoid tumor arising at the tip of a Meckel's diverticulum.[10] One or two others have been recorded since.

Dr. William Tribby, Memphis, Tenn.: Have you ever seen a malignant carcinoid tumor of the appendix?

Dr. Stewart: Not malignant in the sense of being more anaplastic than the rest. The carcinoid tumor is one of the most characteristic I know, and these tumors metastasize without showing a more highly anaplastic structure histologically. They just reproduce these beautiful groups of uniform cells, all of the same size, nuclei all of the same size, and rarely if ever is there a mitotic figure.

Audience Member: Have you ever seen a carcinoid of the appendix metastasize?

Dr. Stewart: Yes, once,[11] in a case in which two large secondary deposits were present in the pelvis, probably arising by transcelomic implantation. I have never seen one with metastasis to the liver or lymph nodes, but I believe there have been cases reported in the literature.

You might be interested to hear of a carcinoid tumor arising in very unusual circumstances. I had a typical teratoma of the ovary, benign, with a variety of tissues in it, together with a carcinoid tumor, apparently arising from a bit of teratomatous intestine. I promptly wrote Dr. Willis, then in Melbourne, to tell him about it. My letter crossed with one from him in which he was hastening to let me know he had had a teratoma of the ovary with a carcinoid tumor in it! We joined forces and wrote them up together.[12] Benign teratomas of the ovary can become malignant—an entirely different thing from the formation of a malignant teratoma *ab initio*. Such secondary malignant change usually takes the form of a squamous carcinoma.

ARRHENOBLASTOMA

CASE 10.—Contributed by Dr. Philip T. Flynn, Austin.

Specimen.—Ovarian tumor.

History.—In 1947 this white woman, aged 38, had an orange-sized pelvic tumor removed, followed by five days of radium therapy, and became amenorrheic. In January, 1950, she developed a deepened voice, masculine characteristics, and increased libido. She showed generalized hirsutism and slight enlargement of the clitoris. At operation the adrenal glands and kidneys were normal. The left ovary was 5 cm. in diameter, slightly flattened, and encapsulated. Cut section revealed a bulging, circumscribed, soft yellow-brown tumor 4.7 cm. in diameter extending to the capsule but not invading it. The center was translucent and mucoid.

Diagnoses Submitted.—Arrhenoblastoma, 38; gynandroblastoma, 1.

Dr. Stewart: Here is almost complete unanimity. The histology, however, is rather indeterminate.

(Lantern slides) Here the appearance on the whole seems to be lepidic, and there is striking regimentation of nuclei in places. The histology of arrhenoblastoma can be very diverse. This tumor contains no mitotic figures, and there is considerable uniformity of both cells and nuclei. The second slide does not show anything especially characteristic. I do not think there is much more to be said about it. I imagine the prognosis would be good.

SWEAT-GLAND ADENOMA OF SKIN

CASE 11.—Contributed by Dr. J. M. Moore, Santa Rosa Hospital, San Antonio.

Specimen.—Tumor of left forearm.

History.—This white woman, aged 79, had a tumor for twenty or thirty years on the anterior surface of the middle third of the left forearm, and it did not increase in size. It was 3 cm. in diameter, rounded, and protruding. It was covered with skin and was well circumscribed. On section the mass was smooth, homogeneous, and gray.

Diagnoses Submitted.—Sweat-gland adenoma, 21; adenoid basal-cell epithelioma, 10; basal-cell carcinoma, 4; mixed tumor of skin, salivary type, 2; skin appendage tumor, 1.

Dr. Stewart: This is a tumor of the skin of long standing. Twenty-one people have voted for sweat-gland adenoma and most of the others for some form of basal-cell carcinoma. I see no particular reason for thinking that it is of salivary gland type. I agree that the term basal-cell carcinoma may reasonably be applied to many salivary gland tumors, but this specimen has the characteristics rather of the epidermal glandular variety and is probably of sweat-gland origin.

(Lantern slides) We see here the gross specimen, and here a section of a fairly cellular portion undergoing slight cystic change, similar indeed to a basal-cell cancer of the usual type. Part of the lesion is highly cystic, and it seems to lack any connection with the surface epidermis, differing in this respect from straight basal-cell carcinoma of the epidermis, in which you can nearly always trace the continuity between the normal epidermic tissue and the underlying tumor. This is one of those more deep-seated, though not so very deep-seated, epidermal tumors apparently arising independently of the surface epidermis, and a sweat-gland origin seems most likely. Here is a higher power view showing a rather myxoid matrix, with many areas of solid epithelium and again cystic spaces here and there.

Dr. A. O. Severance, San Antonio: What criteria did you use to separate a sweat-gland adenoma from a basal-cell epithelioma?

Dr. Stewart: This may not be easy since many epidermal basal-cell cancers form lumens. These latter tumors are more definitely in continuity with the overlying or marginal epidermis, however, and are composed chiefly of solid nests of basal-cell type. This is fundamentally a glandular type of tumor, nowhere connected with the epidermis and most probably derived from sweat glands, continuity with which may often be traced, though not, I think, in the present instance.

Audience Member: Does this resemble ameloblastomas reported over the tibia?

Dr. Stewart: No. Ameloblastomas of the tibia, like those that occur in the jaw and in relation to the pituitary, have as a characteristic feature a peculiar cystic degeneration of the middle zone of the epidermal element. Maxillary and suprapituitary ada-

mantinomas are highly characteristic tumors on account of this intraepidermal cystic change, which may proceed to an extreme degree.

CARCINOMA OF ADRENAL CORTEX

CASE 12.—Contributed by Dr. D. A. Todd, Nix Hospital Laboratories, San Antonio.

Specimen.—Abdominal mass.

History.—This white boy, aged 4, had a history of rapidly enlarging abdomen, general weakness, nausea, vomiting, and precocious development of the external genitalia, including pubic hair. Examination revealed a huge tumor filling practically the entire abdomen. At autopsy the entire tumor was removed along with specimens of lungs and liver. The tumor mass was oval, measured 29 by 17 by 12 cm., and weighed 6½ pounds. It had a nodular surface with dense fibrofatty adhesions and a fibrous capsule with numerous large vessels. The cut surface revealed areas of brownish-yellow irregular nodules.

Diagnoses Submitted.—Carcinoma of adrenal cortex, 34; hepatoma (malignant), 1; rhabdomyosarcoma, 1; chorionepithelioma, 1.

Dr. Stewart: Again we have almost achieved unanimity: carcinoma of the adrenal cortex. In a case like this you can go a long way toward making the diagnosis from the clinical history. Hepatoma? Yes, histologically there is a certain rough similarity, as also to rhabdomyosarcoma. I do not think there is much resemblance to chorionepithelioma.

(Lantern slides) Here is the tumor in the gross—large and brownish—and here you have the histologic appearance, a bizarre type of lepidic structure with giant cells and particularly prominent giant nuclei. In general the giant nuclei are single, occasionally double. Here is a bit of tumor tissue which has undergone recent necrobiosis. In this field the appearance closely simulates the adrenal cortex, but of course it is frankly malignant. The tumor had a masculinizing effect—adrenal virilism. This next slide is from a secondary deposit in the lungs. Here is an enormous giant cell and here a mitotic figure.

MALIGNANT SYNOVIOMA

CASE 13.—Contributed by Dr. L. J. Manhoff, Jr., Robert B. Green Hospital, San Antonio.

Specimen.—(a) Tumor of elbow; (b) liver.

History.—This Negro boy, aged 17, had a small nodule removed from the left elbow when he was 12 years of age. Diagnosis was fibrosarcoma. In one year a recurrence, 15 by 14 by 10 cm., filled the antecubital space. The arm was amputated. The tumor was firm, with a grayish-white and yellow-gray cut surface that showed cystic spaces containing a thin mucoid fluid. The tumor infiltrated fat, muscle, and tendon but was not attached to bone or joint. Later, osteolytic lesions of jaw and pelvis were treated by roentgen ray. At autopsy osteolytic tumor was found also in the vertebrae and ribs. There were numerous nodules in lungs and liver.

Diagnoses Submitted.—Neuroblastoma, 8; malignant neuroepithelioma, 4; malignant synovioma, 4; Ewing's sarcoma, 3; osteogenic sarcoma, 2; fibrosarcoma, 1; endothelial sarcoma, 1; (a) malignant synovioma and (b) neuroblastoma, 9; (a) medulloepithelioma and (b) medulloblastoma, 2; (a) myosarcoma and (b) neuroblastoma, 1; (a) fibrosarcoma and (b) carcinoma, reserve cell 1.

Dr. Stewart: Here is a variety of diagnoses to choose from! One of the intriguing and disturbing features in this case is the contrast between the primary and the secondary tumor.

(Lantern slides) Here is a roentgenogram of the primary tumor at the elbow, and here is the specimen after the subsequent amputation. Microscopically there are two distinct types of tissue present. The bulk of it is of hylic or sarcomatous aspect, but here is an area which is frankly of lepidic or covering-cell type. In relation to this there is a little outpouring of some sort of secretion into some of the cancerous acini.

Sections stained by Masson's method showed up the dual type of structure. My original diagnosis, and the one I still stick to, is synovioma, in spite of its being in fashion and therefore to some extent at a discount.

Now we come to the secondaries—in this case a secondary deposit in the liver. It is a much more anaplastic-looking tumor than the original, being composed of small round cells, but every here and there it is forming structures which are barely distinguishable from neuroblastomatous rosettes, with this difference, however, that they appear to be luminated. The tumor is arising in relation to the elbow, which is an occasional site for synoviomatous tumors. It grew slowly at first, as a synovioma often does. Indeed there is good reason for believing that a synovioma can start and remain for a number of years as a chronic synovitis, especially in the knee joint. Synovial cells are highly phagocytic and can become charged with hemosiderin or lipoid. In a benign synovioma, the commonest type of which is that occurring in the flexor-sheaths tendon and interphalangeal joints of the fingers, the cells are notoriously phagocytic. They take up lipoid, which gives patches of yellow flecking, or hemosiderin, which gives deep brown coloration. However, in chronic villous synovitis of the knee joint, there rarely result simple synoviomas; they are nearly all malignant in this situation.

Professor Willis refers in his book[16] to an unpublished case of mine in which dark brown, richly siderotic tumors arose, apparently from the capsule of the knee joint. These burst through the capsule and some of them were removed. Histologically they were composed of sheets and masses of synovial cells filled with hemosiderin. The tumors recurred, and finally there was evidence that they were infiltrating the muscles both of the lower end of the thigh and the upper part of the leg. The limb was therefore amputated and

invasion of the muscles confirmed. The specimen is now in the museum at Leeds.*

This is certainly a difficult case, as is clearly indicated by the diversity of opinions expressed. I join one of the minority groups.

Dr. F. C. Coleman, San Antonio: What did the other tumor nodules look like microscopically?

Dr. L. J. Manhoff, Jr., San Antonio: It was a complicated case. We had a biopsy of one of the osteolytic lesions before death, and the impression of those of us who saw it was that it was from a second primary tumor, possibly neuroblastoma. At autopsy, of course, what we tried to do was find that second primary tumor. There was no definite primary mass that we could put our fingers on. There was a large mass in the pelvis. The vertebrae and the skull were completely riddled with tumor. There were only about two or three of these small nodules in the liver and in the lungs. Histologically all of the tumor at autopsy was similar to the nodule in the lungs except that the tumor in bone presented a solid sheet of cells without any epithelial arrangement whatsoever.

Dr. Stewart: I take it that there was no tumor in the adrenal glands.

EPITHELIAL TUMOR OF PAROTID

CASE 14.—Contributed by Dr. A. O. Severance, Baptist Memorial Hospital, San Antonio.

Specimen.—Tumor of left parotid gland.

History.—This white man, aged 39, under his left ear had a hard, nonpainful lump which had been present for three months and seemed to be increasing in size. On January 8, 1948, a mixed tumor of the left parotid was excised. The specimen was grayish pink and measured 2 by 1 by 0.5 cm.

Diagnoses Submitted.—Carcinoma of parotid, 12; papillary cystadenoma of parotid, 6; mixed tumor of parotid, 5; oncocytoma, 3; mucoepidermoid tumor, 3; metastatic carcinoma of thyroid, 3; salivary adenoma, 2; oxyphil adenoma, 1; carotid body tumor, 1; Mikulicz's disease, 1.

Dr. Stewart: There is quite a divergence of opinion as between simple and malignant. I am confident it is not papillary cystadenoma, nor is it a mixed tumor of the parotid. My own opinion—the farthest I would care to go—is that it is a primary epithelial tumor of the salivary gland of doubtful innocence—a useful sort of phrase, "of doubtful innocence," when you are in doubt!

(Lantern slides) The structure is epithelial and the cells in general are fairly regular, though it is a very cellular growth, I must admit. There are no mitoses that I could make out. Here is a mucin-stained section. There is a lot of mucin being formed in the tumor, and I think the prognosis is reasonably good. It would be interesting to follow this case and perhaps have the result reported at a later Seminar.

CARCINOMA OF LUNG(?)

CASE 15.—Contributed by Col. C. J. Lind, Brooke Army Hospital, Fort Sam Houston.

Specimen.—Pericardium.

History.—This white man, aged 23, had severe cough and chest pain, mainly precordial, accompanied by fever and dyspnea. A roentgenogram showed a large globular heart shadow and questionable pneumonitis on the right. Symptoms of tamponade and cardiac constriction led to pericardial fenestration. The patient died two months after onset of the symptoms from cardiac constriction. At autopsy "tumor" was seen infiltrating thick adherent pericardium and the bilateral obliterative pleuritis.

Diagnoses Submitted.—Mesothelioma, 10; malignant mesothelioma, 6; adenocarcinoma, undifferentiated, 1; epidermoid carcinoma in pericardium, 1; metastatic carcinoma, 9; carcinoma secondary from lung, 4; metastatic melanoma, 2; angiosarcoma, 1; cavernous hemangioma, 1; hemangioendothelioma, 1.

Dr. Stewart: This case is even more controversial than the last. We have a wide choice of diagnoses from members of the Seminar. I suppose we may lump the first two together, since I take it that "mesothelioma" is intended to mean "malignant mesothelioma." The tumor is obviously malignant. Metastatic carcinoma follows fairly close on the heels of primary mesothelioma. Personally, I think melanoma is out of it, and cavernous hemangioma and hemangioendothelioma as well.

(Lantern slides) Here is a gross transverse section of the heart with the pericardial sac almost obliterated by growth. The fibrous pericardium itself is much thickened by fibrosis. Here is a film of the fluid which was removed by tapping, and there are many big irregular cells, including large clumps and cells with large hypochromatic nuclei.

In this case the pleurae and both lungs were invaded by growth, but before we go on to the sections I would remind you that bronchial carcinoma has a rather peculiar mode of distribution. After the regional lymph glands, the liver is the commonest site for secondary deposits, a fact not always appreciated. After that, the commonest sites for blood-borne secondaries are the adrenals and brain. These two sites of secondary deposits are of great practical importance, especially the brain, and it is the common practice nowadays for no cerebral tumor case to be explored surgically without the most thorough investigation of the lungs first. In past years I have twice examined an intracranial biopsy specimen submitted by a neurosurgeon and reported oat-cell carcinoma of bronchus, and I have twice done a postmortem in cases in which the whole of the clinical symptoms

**This case has since been described at greater length by Wright[19] (p. 596), in his study of the malignant synoviomas, 47 in number, encountered in the pathology department at Leeds during the years 1910 to 1949, inclusive.*

were cerebral and found a minute primary in the lung.

We return now to the sections of pericardium and see these big sheets of obviously lepidic cells, perhaps on the whole rather squamoid in appearance. Here, in this section of lung, is a bronchiole, with cancerous deposits obviously filling peribronchiolar lymphatics; this is an outstanding feature of the lung lesion in this case. Here is another striking picture—a blood vessel showing similar (perivascular) lymphatic permeation by cancer. In going through these lung sections I have been impressed by the constancy of this perivascular and peribronchial lymphatic spread, in other words, the condition known as lymphangitis carcinomatosa. You will find a good account of it, based on my material, by Dr. T. T. Wu.[20]

The tumor tissue itself, in the present instance, has many of the characteristics of a bronchial carcinoma of spheroidal-cell type, and the fundamental problem would seem to be, is this a primary pericardial tumor or is it a primary bronchial tumor with extension to the pericardium? Primary malignant disease of the pericardium, as of the pleura, is rare: direct extension of a bronchial carcinoma to the pericardial sac is a frequent finding at autopsy. I have with me a fine example of primary serosal malignancy, pleural in this instance, which I want to pass around. It is a section of a whole lung, mounted on paper, which was cut for me by Professor Gough of Cardiff, Wales, by a new technique of his own devising. It is from a case of pulmonary asbestosis, with what I considered a superimposed primary serosal malignancy—a mesothelioma in part lepidic and even papillary in type, but mainly sarcomatous, involving the whole pleural sac. There was no evidence of cancer in the lung, or in the other lung or pleura, or in any other part of the body, and indeed I believe this to be primary pleural malignancy occurring in a case of asbestosis. The asbestosis lesion, by the way, is seen mainly in the lower lobe—a diffuse, streaky, dense fibrosis running through the lung tissue.

Now to return to the knotty problem of the present case. Frankly, my first view was that it was a primary pericardial tumor—primary pericardial serosal malignancy—but knowing how frequently bronchial carcinoma invades the pericardium, I feel disposed to change my mind and come down on the side of primary bronchial cancer with extension to pleurae and pericardium.

Audience Member: How are these beautiful paper impressions made?

Dr. Stewart: These whole-lung sections are the work of Dr. Jethro Gough of Cardiff, professor of pathology in the University of Wales. He invented this method some years ago, and it is now being actively pursued both by himself and by Professor Dugnid of Newcastle, England, Professor Gough's former chief. It is a simple though laborious and time-consuming technique. The salient features of the process are that the lungs are taken out intact from the body along with the trachea and bronchi and distended under low pressure with a special formalin fixative. They are then left in a large tank of formalin for several weeks, after which a slice about 0.5 inch thick is taken through the whole thickness of the lung and embedded in gelatin (which is hardened with formaldehyde); sections about a millimeter thick then are cut with a large slicing microtome. This thin slice is laid out flat, without creases, on a sheet of paper; another sheet of paper is laid on top, and the whole is squeezed like a photograph print. It is then left to dry for several weeks, and at the end of that time the top sheet of paper, with the section of lung incorporated with it, is peeled off and is immediately available for display in the state in which you now see it. This is a permanent preparation. The one now exhibited was cut two or three years ago and shows no sign of deterioration. The method was first published in 1947 by Gough and with later modifications in 1949 by Gough, James, and Wentworth[6] and Gough and Wentworth.[5]

DUCT-CELL CARCINOMA OF PANCREAS

CASE 16.—Contributed by Col. C. J. Lind, Brooke Army Hospital, Fort Sam Houston.

Specimen.—Liver and lung.

History.—This white man, aged 77, with a past history of alcoholism, was admitted to the hospital because of recurrent jaundice. He showed marked jaundice, moderate hepatomegaly and two spider hemangiomas on the chest. Serum bilirubin was 7.2 mg. per 100 cc.; thymol turbidity was 1.6. Gastrointestinal studies were negative. Despite treatment with a high carbohydrate, high protein, and normal fat diet and vitamins, the patient died in about five weeks. At autopsy the right hepatic lobe contained irregular, poorly circumscribed, necrotic nodules. Numerous stones were found in the dilated biliary tree, including a large occluding stone near the papilla of Vater. There were numerous small (0.5 cm.) circumscribed nodules in the lung periphery.

Diagnoses Submitted.—Primary carcinoma of liver (cholangioma), 31; secondary adenocarcinoma in liver and lung, 3; alveolar carcinoma of lung, 1; adenocarcinoma of pancreas (duct type), 1; portal cirrhosis with duct-cell carcinoma, primary adenocarcinoma of lung, 1; Kaposi's idiopathic hemorrhagic sarcoma, 1.

Dr. Stewart: This is a case about which there has been some domestic controversy! The great majority of votes are recorded for primary carcinoma of the liver—cholangioma or bile-duct cancer, as I also voted at first without hesitation. There is one person present (and he can pat himself on the back) who voted for adenocarcinoma of the pancreas (duct type). It

is believed by several people here that this is not a primary tumor in the liver at all, but that it started lower down, possibly in the pancreatic duct, and invaded the liver secondarily.

(Lantern slides) Here is a photograph of the gross specimen. Here is the gallbladder filled with stones, including a stone in the neck of the gallbladder. There is also a stone in the common duct. Here is the pancreas, and in the pancreatic duct, or, as I see it, partly in the parenchyma of the pancreas and partly in the pancreatic duct, there is a carcinoma. Exactly the same kind of malignant tissue is infiltrating the hilum of the liver as you saw in the sections sent to you. Of course, we must not forget that the pancreatic duct and the biliary passages have much in common anatomically and their respective carcinomas are virtually indistinguishable. Here is the liver, showing the changes of obstructive jaundice, and there is also a large mass of growth replacing part of the liver tissue. Here is a good slide in color showing the gallstones in situ, with a chronically inflamed gallbladder, and here is diffuse infiltration of the liver by carcinoma.

This next slide is a section of lung showing somewhat discrete foci of carcinomatous infiltration, and here the cancerous acini are seen extending along the portal tracts. There is nothing in the parenchyma. Here is a high power view of what might be regarded as characteristic bile-duct type—cholangiomatous type—of primary hepatic tumor, but it does not exclude the possibility of a pancreatic duct origin. I am not certain where this section came from, pancreas or liver. Here, however, is a section of pancreas, and again there is cancerous tissue present. My final impression on surveying this case as a whole is that the primary tumor arose in some part of the pancreatic duct rather than in either the pancreatic parenchyma or the liver. A hepatoma can be confidently excluded. Finally, here is a regional lymph node, one in close relation to the pancreas, with a big deposit of growth in it.

Dr. Bela Halpert, Houston: Is there any possibility that this might have arisen in the gallbladder, since the gallbladder is thickened all around its pelvis? In that gross specimen there was an area of thickening around a portion of the gallbladder adjacent to the liver, and the histologic structure of this would fit in well with an adenocarcinoma of the ducts of the gallbladder.

Capt. E. H. Johnston, Fort Sam Houston: The carcinoma had infiltrated the wall of the gallbladder, but the mucosal portion of the gallbladder grossly had a smooth surface. It is not shown here, but there is tumor extending up to, though not through, the gallbladder mucosa. The sections through the head of the pancreas reveal the malignant cells apparently arising from the pancreatic ducts.

Dr. Halpert: Of course, in the wall of the gallbladder there are aberrant ducts called Luschka ducts. From them carcinoma may arise and yet not necessarily invade and ulcerate into the gallbladder wall but grow just around the outside, and then invade the liver and then spread to the lungs.

Dr. Stewart: I do not think I saw a section of gallbladder wall, but to the naked eye it does not suggest neoplasm. It looks exceedingly fibrous. I think the gallbladder wall had better be cut and examined if this has not already been done.

Dr. Halpert: As Professor Stewart mentioned, physiologically the pancreatic duct and biliary passage are practically identical structures, and the neoplasms that they form are indistinguishable from one another. I recall an instance where finally, after we had eliminated all the organs, we found in the gallbladder an area about 0.5 cm. in diameter on cross section, from which obviously the neoplasm arose. That portion was both squamous and columnar.

Dr. Stewart: A malignant tumor undergoing squamous metaplasia? Of course, a hepatoma is a characteristic tumor compared with this, which looks like many other adenocarcinomas. I remember well having a tumor of rib sent to the laboratory. It had been excised surgically and was about the size of an English golf ball. Sections showed a typical liver-cell carcinoma, even to the extent of having one or two little beads of bile in some of the cancerous acini. It was reported accordingly, and as luck would have it, the patient died a week later. At autopsy we found a single hepatoma in the liver about the same size as the metastatic deposit in the rib—a liver-cell carcinoma, and this single solitary secondary. It is an interesting tumor, hepatoma, the way it will spread to the lymph nodes and nowhere else in some cases, and in others spread to the lungs only, but I have never seen any other case with just a single remote (obviously blood-borne) secondary like this. Cholangiocarcinoma is likely to spread much more widely.

Dr. H. W. Neidhardt, Beaumont: What is the relative frequency of hepatoma and cholangioma?

Dr. Stewart: Well, I cannot answer that one out of hand, but I have seen a good many examples of both. I wrote something on this subject in my Croonian lectures on precancerous lesions of the digestive tract given at the Royal College of Physicians of London in 1931, but I do not remember just what my figures were.*

**In a collected series of cases from the European and American literature the comparative frequency was 5 to 1, namely liver-cell type 139 cases, bile-duct type 28 cases (Stewart,[3] p. 568).*

Dr. Bela Halpert, Houston: The liver-cell carcinomas seem to be now a little bit more frequent. I reviewed the autopsy protocols of the Charity Hospital at New Orleans. In the necropsies there were 23 carcinomas of the liver and of those about 18 were liver-cell carcinomas and the others were columnar-cell carcinomas.

I think the term hepatoma really should not be used. We are coming in pathology to call things names like meningioma and hepatoma, and next we shall have "leg"-oma and all that. I think that neoplasms should be named according to the cell which makes the growth. That is the simplest terminology. These are columnar-cell carcinomas. Let us call them that. Columnar-cell carcinomas and liver-cell carcinomas. Liver-cell carcinomas, of course, are characterized, as Professor Stewart mentioned, by producing bile and the appearance of the liver cells. They produce bile even in the metastatic nodules.

Dr. Stewart: I could not agree more about this use of organs to name tumors. I never use the term hepatoma but always speak of a "liver-cell carcinoma." I think the term "cholangioma" is in a somewhat different category because it is more frankly the duct epithelium that is referred to. Even so, a "bile-duct adenoma" or "bile-duct carcinoma" is the proper usage. We do not speak of a "gastroma" or a "pneumoma," so why hepatoma? The point has not been mentioned, but I would remind you that liver-cell carcinoma is much more common in cirrhotic than in noncirrhotic livers, but this does not apply to bile-duct carcinoma, in my experience. The statistics are set out in my Croonian lectures.[9] It was interesting to find also that the incidence of primary liver-cell carcinoma was exactly the same in ordinary multilobular cirrhosis as in hemochromatosis.

METASTATIC CARCINOMA OF THYROID

CASE 17.—Contributed by Lt. Col. F. M. Townsend, USAF Hospital, Lackland Air Force Base, San Antonio.

Specimen.—Lymph node.

History.—This white boy, aged 19, had had an enlarged thyroid gland since the age of 13. He noted a mass in the side of his neck recently. Examination showed multiple nodes bilaterally in the neck. Biopsy revealed a well-circumscribed, 2 cm. brown nodule containing several small cystic spaces.

Diagnoses Submitted.—Metastatic papillary carcinoma, 32; lateral aberrant thyroid, 3; adenolymphoma, 1; metastasizing thyroid struma, 1; thyroglossal cyst, 1; aberrant cystic and hemorrhagic thyroid nodule, 1.

Dr. Stewart: This is one of those cases of bilateral thyroid tissue in the cervical lymph nodes, and 32 people take the view that it is a genuine metastasis from a primary papillary carcinoma of the thyroid and 3 call it lateral aberrant thyroid, presumably taking the view that it is not metastatic but merely ectopic. Adenolymphoma can be discounted; metastasizing thyroid struma—well, that fits in with the first diagnosis; and it is not a thyroglossal cyst.

(Lantern slides) The first point of interest is that the bulk of this lateral cervical lesion consists of well-differentiated thyroid tissue with abundant colloid. It is not happy looking colloid, I admit, but the epithelium is, for the most part, a single layer. There has been a lot of old hemorrhage in places and much resulting hemosiderin deposition. Here is a little residual lymphoid tissue. Bilateral or even unilateral deposition of well-differentiated thyroid tissue in cervical lymph nodes is a well-recognized condition, and the chief controversy is between those who would regard it as an anatomic misplacement—an ectopic or abnormal blending of tissues—and those (including Willis[17]) who think it is just another example of malignant metastasis.

Here is a good picture showing one or two rather more cellular areas, and here is the lymphoid tissue at the periphery. Now all this looks innocent structurally. There is much colloid formation and there are many desquamated cells and cells filled with hematogeneous pigment. Where there is colloid formation, the epithelium looks mature. Some of it is a little more irregular, perhaps. I must say I have accepted the view that these lateral aberrant thyroids are secondary deposits from a thyroid carcinoma. If so, this example is evidently a slowly growing one and well differentiated. The alternative view of a developmental misplacement of thyroid tissue is attractive, nevertheless, and cannot be set aside meantime.

Lt. Col. Paul C. LeGolvan, Fort Sam Houston: Would you discuss prognosis in cases such as this?

Dr. Stewart: I cannot speak on this matter from personal experience, having seen only a few cases myself and I have never followed them up.*

HURTHLE-CELL ADENOMA OF THYROID AND STRUMA LYMPHOMATOSA

CASE 18.—Contributed by Col. C. J. Lind, Brooke Army Hospital, Fort Sam Houston.

Specimen.—Thyroid gland.

History.—This white woman, aged 27, was six weeks postpartum. For four years she had had a thyroid nodule which had grown slightly with each of her two pregnancies. The specimen consisted of two pieces of tissue, the larger

**I would refer you to Crile's paper on this subject[8] in which he made it clear that in his experience lateral aberrant thyroid tissue and indeed the tumors which may arise therein are essentially benign. None of the 13 patients in his series died as a result of lateral aberrant thyroid disease. He further stated that only 2 of the 45 patients classified in the literature as having malignant tumors of lateral aberrant thyroid origin have been reported to have died as a result of recurrence of the tumor following operation.*

4 by 4 by 3.5 cm. and the smaller 3 by 2.5 by 1.5 cm. The external surfaces of both pieces were irregular and grayish white to pink in color. On cut section of the larger piece there was a soft, well-circumscribed nodule making up most of the tissue and measuring 2.5 mm. by 2 cm.

Diagnoses Submitted.—Embryonal adenoma, 14; Hürthle-cell adenoma (includes 2 with Hashimoto struma), 13; carcinoma, 9; malignant adenoma, 1; carcinoma (Hürthle cell), 1; struma lymphomatosa, 1.

Dr. Stewart: Embryonal adenoma and Hürthle-cell adenoma share pride of place, with eleven going for malignancy. Oh! and struma lymphomatosa at the bottom of the list, but two others referring to it! I shall have a word to say about that in a moment.

(Lantern slides) Here is a tumor which is rather characteristic. It corresponds in my opinion with the cases that have been called Hürthle-cell tumors of the thyroid and consists of solid columns of epithelium, well-differentiated, and often showing in places a certain degree of nuclear alignment or palisading. There are well-defined blood-capillary channels running through it. There is no great cellular irregularity, nor any evidence of great proliferative activity. In other words, I consider that this tumor is benign. I think that it is an adenoma of the thyroid.

It does not belong to the category of fetal-cell adenoma, which is more frankly acinar. These are solid columns of epithelium, not luminated anywhere. Here is a higher power view and here is a field which shows strikingly the solid epithelial character of the tumor, a frankly lepidic growth but without lumens. I am not going to enter into the question of terminology. The term Hürthle-cell tumor, rightly or wrongly, seems to be widely used, though Willis gives valid reasons for preferring the name of large eosinophilic-cell tumors.

However, most people know what they mean when they say a Hürthle-cell tumor, and I consider it benign.

In the section which was sent me there was a small darkly staining area at the corner which proved to be part of the original thyroid gland. It showed notable blending of thyroid and lymphoid tissue—not merely the occurrence of well-defined lymphoid follicles in the thyroid, which is common enough, but an infiltration with lymphoid tissue which was breaking up the thyroid acinar tissue. I formed the opinion that there was a (perhaps preexisting) condition of struma lymphomatosa, the Hashimoto type of thyroiditis. I have since seen sections from another part of the thyroid which in my opinion confirm this view.

Dr. John H. Childers, Galveston: What significance do you attach to blood-vessel invasion in so-called "adenomas" of the thyroid?

Dr. Stewart: I attach great importance to this phenomenon, and I think that is the general view among British pathologists. If you find evidence of thyroid tissue frankly within blood vessels, even if it is well differentiated, it is a bad sign. We have, as some of you probably know, a tumor histology panel at home. We started it about twenty years ago on a small scale at the request of the Radium Commission. Now we have it on a much bigger scale, sponsored by the British Empire Cancer Campaign and the Pathological Society of Great Britain and Ireland. Any pathologist can send in blocks of paraffin—embedded material from tumors about which they are in doubt—and have them reported on. The sections are cut, stained, and circulated to all members of the panel, each of whom reports individually to the secretary without knowing the opinions expressed by the others. The members of the panel are widely distributed over England and Scotland.. I am reminded of this just now because last year we had a number of thyroid sections sent to us by a thyroid panel in the United States. I think I am expressing the general consensus when I say that we take a serious view of blood-vessel invasion as a sign of malignancy.. We all know of such cases in which the thyroid was neither grossly enlarged nor flagrantly malignant histologically and yet gave rise to blood-borne secondaries.

Dr. H. W. Neidhardt, Beaumont: Do you consider Hürthle-cell tumor a pathologic entity or merely a morphologic characteristic which the cells may assume in different types of lesions?

Dr. Stewart: I regard it as a specific tumor. I am unfamiliar with an adenomatous tumor of the thyroid which shows in part the Hürthle-cell type of structure and in part the more usual type of thyroid adenoma. I think it is a distinct type, whether or not it is derived from those hypothetical epithelial cells that are supposed to occur in the stroma of the thyroid. I think it is a special type of adenoma of the thyroid.

Audience Member: Do you feel there is any connection between Hürthle-cell adenoma and Hashimoto's struma?

Dr. Stewart: The Hürthle-cell tumor is rare in my experience. I have seen but few, probably less than half a dozen. Hashimoto's struma, on the other hand, is common in the British Isles. I have seen many examples. It is not strictly relevant to this question, perhaps, but I would like to mention that two workers in my laboratory have recently published a paper[7] based on 4 cases of reticulum-cell sarcoma of the thyroid. They went into the question of its possible relation to Hashimoto's struma and concluded that there was no evidence to suggest that reticulum-cell sarcoma was more common in Hashimoto's struma than in non-Hashimoto thyroids.

Brig. Gen. Elbert DeCoursey, Washington, D. C.: Do you have an opinion concerning the reason some metastatic neoplasms become fibrotic and act benignly?

Dr. Stewart: There is no doubt that some tumors are capable of stimulating a much more intense fibrous capsule than others. You saw it in the case of one of these very cellular tumors earlier today, the synovial sarcoma with metastases in the axillary gland (case 5). Even the metastatic deposits were surrounded by a thick fibrous capsule.

I have mentioned already John H. Teacher's point about the spontaneous cure of chorionepithelioma. But that is rather a special case, because this tumor has no intrinsic blood vessels. It is dependent for its oxygen on what diffuses into it from the surrounding maternal tissues. There are metastatic tumors which stimulate excessive capsulation around them, which in turn may cut off the oxygen supply. But this is not a mechanism on which we can rely as being of any real practical value when we are considering matters of surgical or other therapeutic procedure. Why it occurs I do not know, or why a metastatic deposit should become more fibrotic than the primary tumor, which I take to be the point of your question.

Dr. A. O. Severance, San Antonio: I am sure that all of you have enjoyed as much as I this fine day and the presentation of Dr. Stewart. I think at this time it would be appropriate if we would all rise in a vote of thanks to Dr. Stewart. (Applause)

On behalf of the various sponsoring groups of this Seminar, and particularly in behalf of the pathologists of San Antonio, may we invite you back again next year. We hope you have enjoyed this as much as we have enjoyed having you.

Dr. Stewart: Thank you for the kindness of your reception. It has been a great pleasure to be here and to meet such a fine group of pathologist colleagues.

Dr. Severance: Dr. Wallace, do you want to say something?

Dr. Stuart A. Wallace, Houston: I have had the pleasure of attending most of these meetings (I think I missed one), and as far as I know no person has ever publicly expressed thanks to the San Antonio group for inviting us to attend. I want to do that right now. Of course, I cannot remember all of the people, but I certainly want to thank Dr. Stewart for his presence and Dr. B. F. Stout, who is actually the one who initiated these Seminars. I think he deserves by far the largest amount of credit. Dr. A. O. Severance, Dr. J. M. Moore, Dr. D. A. Todd, Dr. H. J. Schattenberg, Dr. L. J. Manhoff, and General Gaines certainly should be mentioned. (I recall at one meeting that the commander of the laboratory himself ran the one projector.) Besides General Gaines, Colonel Lind and especially Captain Redner have been in the forefront. We should include in the San Antonio group today one of our Houston colleagues, Dr. William O. Russell, because he was instrumental in preparing the slides. I really want to thank the San Antonio group. (Applause)

REFERENCES

1. Adami, J. G.: On Classification of Tumours, J. Path. & Bact. *8*:243-259, 1902.
2. Crile, G., Jr.: Papillary Tumors of Thyroid and Lateral Aberrant Thyroid Origin, Surg., Gynec. & Obst. *69*:39-47 (July) 1939.
3. Dukes, C. E.: Peculiarities in Pathology of Cancer of Ano-Rectal Region, Proc. Roy. Soc. Med. *39*:763-765 (Oct.) 1946.
4. Gough, J.: Pneumonoconiosis in Coal Workers in Wales, Occup. Med. *4*:86-97 (July) 1947.
5. Gough, J., and Wentworth, J. E.: Use of Thin Sections of Entire Organs in Morbid Anatomical Studies, J. Roy. Microscopical Soc., series 3, 69 (part 4): 231-235 (Dec.) 1949.
6. Gough, J.; James, W. R. L.; and Wentworth, J. E.: Comparison of Radiological and Pathological Changes in Coal Workers' Pneumonoconiosis, J. Fac. Radiologists *1*:28-39 (July) 1949.
7. Kellett, H. S., and Sutherland, T. W.: Reticulosarcoma of Thyroid Gland, J. Path. & Bact. *61*:233-244 (April) 1949.
8. Stewart, M. J.: Use of Polarized Light in Detection and Investigation of Suture Materials Embedded in Tissues, Brit. M. J. *1*:663-665 (May 15) 1920.
9. Stewart, M. J.: Precancerous Lesions of Alimentary Tract, Lancet *2*:565-572 (Sept. 12) 1931.
10. Stewart, M. J., and Taylor, A. L.: Carcinoid Tumour of Meckel's Diverticulum, J. Path. & Bact. *29*:135-136 (Jan.) 1926.
11. Stewart, M. J., and Taylor, A. L.: Carcinoid Tumour of Appendix with Large Pelvic Deposits, J. Path. & Bact. *29*:136-139 (Jan.) 1926.
12. Stewart, M. J.; Willis, R. A.; and de Saram, G. S. W.: Argentaffine Carcinoma (Carcinoid Tumour) Arising in Ovarian Teratomas: Report of Two Cases, J. Path. & Bact. *49*:207-212 (July) 1939.
13. Teacher, J. H.: On Development and Natural Healing of Secondary Tumours of Chorion-epithelioma Malignum, J. Path. & Bact. Cambridge *12*:486-507, 1907-1908.
14. Thomson, J. G.: Fatal Bronchial Asthma Showing Asthmatic Reaction in Ovarian Teratoma, J. Path. & Bact. *57*:213-219 (April) 1945.
15. Willis, R. A.: Structure of Teratomata, J. Path. & Bact. *40*: 1-36 (Jan.) 1935.
16. Willis, R. A.: Pathology of Tumours, London, Butterworth & Co.; St. Louis, C. V. Mosby Co., 1948, pp. 575-577.
17. Willis, R. A.: Tumor Seminar, Texas State J. Med. *46*:611-638 (Aug.) 1950.
18. Wright, C. J. E.: Benign Giant-Cell Synovioma: Investigation of 85 Cases, Brit. J. Surg. *38*:257-271 (Jan.) 1951.
19. Wright, C. J. E.: Malignant Synovioma, J. Path. & Bact. *64*:585-603 (July) 1952.
20. Wu, T. T.: Generalized Lymphatic Carcinosis ("Lymphangitis Carcinomatosa") of Lungs, J. Path. & Bact. *43*:61-76 (July) 1936.

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Schools of professional nursing in the United States and its territories admitted 42,542 new student nurses in 1952, reports the Committee on Careers in Nursing of the National League for Nursing. This is an increase over the 42,053 admitted in 1951. In Texas, however, fewer were admitted to state-approved nursing schools in 1952 than in 1951, the figures being 1,119 for 1951 and 1,034 for 1952.

Patients continue to be admitted to tuberculosis hospitals with moderate to far-advanced tuberculosis, giving a history indicative of disease having been present for many months before the actual diagnosis was made. With the facilities which are available today there seems to be little if any excuse for the frequency of this occurrence.—James M. Blake, M. D., New York State J. Med., Feb. 1, 1952.

MEDICAL RESEARCH IN KOREAN CONFLICT

With Emphasis on Clinical Pathology

W. D. TIGERTT, Lt. Col., M.C., U.S.A., Washington, D.C.

I PROPOSE to review certain aspects of the research effort of the Army medical service, paying particular attention to that portion now being conducted in the Far East and giving consideration to the roles of laboratory workers. Because this represents an interlocking segment of the research approach, it cannot be treated as a separate entity and must be viewed against the background of the overall problems faced by the medical service of the Army. Many of these problems have no particular counterpart in the everyday practice of civilian medicine in the United States.

The aims and relative importance attached to the various segments of the medical service research program are based on an appraisal of the loss of man-days contributed by each. Thus, based on data obtained in World War II and in the current conflict, the largest single loss of man-days (and of rejection and discharge from the service) is due to neuropsychiatric causes. The second largest loss is caused by wounds of all types, with the communicable diseases forming the bulk of the remainder, being relegated to this tertiary position for the first time in the history of warfare. Potential methods of warfare may well introduce certain modifications in this order of listing. In the day-to-day operation of the research endeavor, advantage must be taken of all existing opportunities, and the program operates on a worldwide basis, using all scientific disciplines and drawing investigators from all sources, both in and out of uniform. Only by such a concerted effort can progress be made.

Operating directly under the Medical Research and Development Board of the Office of the Surgeon General, the Army Medical Service Graduate School is responsible for the bulk of the in-service research activity although numerous other agencies participate therein. During the past two years, teams from the school have conducted studies in Malaya, Borneo, Japan, Philippine Islands, Alaska, Puerto Rico, India, and Madagascar since the potential problems of wartime can be found only in these remote areas. Similarly, teams have been in Korea on a continuous basis.

Before describing specific studies in Korea, it is perhaps well to recall certain factors that both modify and make possible this research effort. Much of this program is based on the 406th Medical General Laboratory located in Tokyo. This organization has occupied a unique position since for the first time in an American armed conflict there existed, prior to hostilities, a well equipped and staffed laboratory unit only three or four hours distant from the site of battle. Consequently, there has been the opportunity to demonstrate the value of such a unit, and it has carried many varied responsibilities. There is a smaller service type laboratory unit in Korea, and the facilities of both have been augmented by special teams put together for specific problems.

The conditions of conflict warrant a brief description. During recent months, the lines have remained relatively stable, with the supporting medical facilities located close to the front. Combined with the increasing use of helicopters, this has resulted in many of the severely wounded surviving until they could reach a point of definitive medical care. For these reasons, the surgical teams are being confronted with casualties of a type that in previous conflicts simply did not live long enough to reach medical facilities and were, therefore, not a problem in a therapeutic sense. The summer and winter temperatures vary widely; these extremes have produced illness ranging from heat exhaustion to cold injury. This picture has been complicated further by a large civilian population living under primitive sanitary conditions.

So much for the general background. In the discussion to follow, I shall describe the work of many individuals, portions of which are not yet published, so that this must be considered as a progress report. It is not possible to identify all of the participants; therefore, no effort will be made to do so in any instance.

NEUROPSYCHIATRIC CASES

Only after certain of the other causes of manpower loss were materially reduced did neuropsychiatric causes assume their present importance; and the fact that in World War II, and in the present conflict, this cause looms large is in one respect a tribute to the control measures available against the communicable diseases. I will not attempt to describe the purely psychiatric features of the studies that are now under way in Korea, but it is essential that reference be made to the several related physiologic programs.

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**Assistant Commandant, Army Medical Service Graduate School, Walter Reed Army Medical Center.*

Amazingly little is yet known about the physiologic changes that occur under conditions of stress, and, for that matter, there is no clear definition of the term "stress." Studies now in progress deal with alterations in body fluid compartments associated with a decreased intake of fluids, with changes in the excretion pattern of the various steroids, and with the related general metabolic changes. Preliminary studies carried out in troops immediately following prolonged combat show a leukopenia with a moderate left shift, a normal hematocrit, and an unchanged plasma protein level. There was no evidence of a lowered fluid intake, yet the urine remained at a high level of specific gravity for a period of hours. Although these are extremely fragmentary observations, they suggest that the effects of combat stress and the attendant exercise may be materially different from those produced by exercise alone.

These relate also in a direct fashion to the immediate care of the wounded. For example, what is the contribution of dehydration or exposure to the picture seen in the wounded? Work in this general area has been slow as the result, at least in part, of inadequate information on structural and biochemical alterations associated with such stresses. Perhaps one is justified in borrowing a term from the psychiatrists and noting that a lack of communication has resulted in strained interpersonal relations between psychiatrists and pathologists. More specifically, there is the requirement for a conceptual schema that considers the interrelation of physiologic functions and morphologic features.

WOUNDS

War is sometimes described as "epidemic trauma." Here, in contrast to, but closely intermingled with, the previous problems of stress, there is no difficulty in characterizing at least the gross alterations. It is essential to emphasize the extreme severity of the wounds that under the conditions existing for prompt and courageous medical care are compatible with life and with recovery. Multiple wounds are the rule; and with the growing use of body armor, this multiplicity of injuries will increase.

Blood Transfusion

Many are familiar with the present policy of the Armed Forces with regard to whole blood transfusions. Group O blood, much of which is collected in this country, is maintained under refrigeration. Such blood is usually ten to eighteen days old at the time of use and is given without crossmatching, the high titer blood going only to group O recipients. It is not uncommon for a wounded and shocked patient to receive 20 to 30 pints of blood during the relatively short period required for resuscitation and operative maneuvers. The requirement for such massive transfusions may exist in the patient with no significant evidence of bleeding, and apparently these tremendous amounts are required to fill the markedly dilated vascular system so as to maintain at least a minimum circulating volume. There is definite evidence that the rate of mixing of radioactive tagged red cells proceeds at different rates in various parts of the body in such cases.

Careful studies have failed to demonstrate that the moderately high levels of potassium in the plasma portion of the stored blood produce any significant changes in the recipient even when given in the huge quantities employed. Similarly, there is no evidence to support the "hypothesis" that free hemoglobin in the plasma contributes in any apparent way to the complications seen in the severely wounded.

These large transfusions have provided an opportunity to answer, in part, the previously hypothetical question of the effect of replacing temporarily the patient's own group blood with that of group O. Differential counts have indicated that if, as an example, the blood of a type A recipient is replaced with type O to the extent of 80 to 90 per cent, there is a progressive disappearance of the recipient's own cells from his circulation. How long this continues is not known, and the loss of hemolysis does not appear to be associated with clinically apparent phenomena. If additional transfusions are required, it is the current practice to continue with type O blood rather than to attempt a crossmatch with the patient's presumed type. When these large transfusions are given, it is possible to demonstrate the persistence of anti-A cold agglutinins in some persons and not in others. There appears to be some correlation with their rapid disappearance and the presence of A substance in the saliva. This correlation is by no means complete but seems to suggest that the removal or persistence of transfused antibodies may depend on the presence or absence of A substance in tissues other than red cells.

In wounded patients given these massive transfusions, recovery of tone of the vascular system has not resulted in heart failure or pulmonary edema or other signs of vascular overload. Initially, the compensation appears to be by loss of plasma, leaving a picture of polycythemia. Careful study of these phenomena is under way, but the picture has recently been complicated by the demonstration that under conditions of severe shock there is a decrease in the mean corpuscular volume. In contrast to the average of 90 cubic microns, figures as low as 71 have been encountered.

One final comment on these massive transfusions is in order. Patients given as much as 15 pints of blood may well show a temporary defect in the coag-

ulation mechanism, resulting in a moderate oozing. This is probably due to a temporary deficiency of the labile factor and ordinarily corrects itself without treatment. Fresh transfusions have been used in some instances.

Small quantities of dextran and of gelatin are in use, but suitable comparative data are not yet available. Mention will be made of plasma later.

Operative Procedures

Considerable modification in the various operative procedures has been made. This is most evident in the field of vascular surgery, in which fresh homografts or repair of the defect by direct anastomoses has been used. Results have been particularly encouraging in wounds of the major vessels of the extremities. In World War II, such wounds resulted in a rate of amputation of about 50 per cent for the lower extremity and 24 per cent for the upper. Using the newer techniques, these figures have been materially reduced. In 33 successive cases no amputations were required if the operation was performed within nine hours of injury and were performed in only one-fourth of cases treated beyond that time. Using the gross appearance as an index, surgeons have excised segments of the injured vessels until apparently normal vascular wall was encountered. Histologic sections have shown that the medial defect characteristically produced by the shock wave has persisted in all excised tissue. Despite this, the repairs have been successful, demonstrating the need for continued study of what constitutes an irreversible alteration in the structure of such vessels. Banked vein and artery grafts have not been used in quantity by our groups in Korea although they are under active study in the United States in an effort to answer the many questions attendant on their use.

Renal Failure

One of the well known complications of shock is post-traumatic renal insufficiency as manifested by a tendency toward isosthenuria, azotemia, often oliguria, potassium intoxication, and clinical uremia in the presence of normal or elevated levels of blood pressure. To facilitate the study of such patients and to afford the maximum in treatment, a single medical unit has been designated as a renal treatment center, and patients are transported there by air from all parts of the medical system. Here, careful laboratory investigations are conducted and continuous observation is maintained. Management of these patients includes restriction of fluids so as to just equal the fluid loss; the provision of at least 1,000 calories per day (250 Gm. of glucose) administered by polyethylene catheter if necessary; and the use of intragastric feeding of fat or olive-oil-glucose emulsion if tolerated. An electrocardiogram is recorded daily, or oftener; movement of patients to avoid thromboses and pulmonary edema is encouraged; and administration of potassium ion exchange resins and other ancillary treatment is as considered indicated. Packed erythrocytes are well tolerated, and an effort is made to maintain the hematocrit level at 35 per cent. During the succeeding phase of diuresis, balancing amounts of fluids and electrolytes are required.

Available at the renal treatment center is an artificial kidney of the Brigham-Kolff type. This is employed to correct significant potassium intoxication, clinical uremia, and marked electrolyte imbalance. During the period this center has been in operation, approximately 50 post-traumatic renal failure patients have been studied. More than half of these have had 1 or more dialyses with an average of 2 per patient. We are, of course, completely aware of the divergent notions held concerning the usefulness of the artificial kidney. However, there are significant differences in the patients admitted to this center and those seen in civil life. Almost all are young healthy adults who have sustained multiple severe injuries. Frequently there may have been a lag of from twelve to eighteen hours between injury and initial operative therapy. Many have perforating wounds involving the large and small bowel with massive peritoneal soilage. Broad spectrum antibiotics are essential in the effort to keep infection under control. Many require surgical intervention during the period of oliguria. Under this combination of insults, any relief that can be afforded may well prevent the addition of that "last straw that broke the camel's back."

Cessation of clinical symptoms following or during dialysis is dramatic. The clouded sensorium usually disappears. Nausea and vomiting diminish, and the electrolyte imbalance is temporarily corrected. There has been eventual return of renal function in about 40 per cent of the patients so treated. This contrasts to the figure of World War II in which about 10 per cent of these patients recovered. It is much too early, of course, to know what the long term effect of such periods of treated anuria may be.

Other efforts are devoted to characterizing the contributory factors that may be operative. For example, in patients of the type previously described, wound healing is absent or markedly diminished during periods of anuria. Stay sutures must remain in place for long periods and dehiscense is not rare. There is a severe negative nitrogen balance, and methods of intravenous administration are under study. The role of bacteria or bacterial products in producing both the early and late features of this clinical picture in the wounded is not understood. There is the suggestion that a factor released from devitalized tissue or

from the ordinarily saphrophytic bacteria, or from both, may play a significant role. No particular use would be served by enumerating the multiple deficiencies in our knowledge since my primary purpose is to point out the close cooperation that must exist between the clinician, the surgeon, and the clinical pathologist if we are to afford these patients the best presently available therapy and if we are to continue to expand our awareness of the metabolic derangements that exist.

The average time of death of patients with posttraumatic renal failure in World War II was about six days after wounding. The average in the group in Korea who died, despite current therapy, is twelve days. These persons die, not of uremia or potassium intoxication, but of massive infections or pneumonia or severe malnutrition. Thus, a modification in therapy has resulted in uncovering a series of new factors, most of which were probably contributory to the original cause of death in such patients but which are now brought into sharp focus. There is no place for a complacent acceptance of existing information if we are to continue to reduce the death rate in these severely wounded and, perhaps of more serious import, the death rate in those wounded in whom treatment is necessarily delayed for a period of hours, such as might well occur in the event of mass bombings. Obviously, the type of fine medical care now afforded the wounded in the small scale operation in Korea would not be readily available and conceivably would be impossible to equal.

Pathologists who have the ability to deal both in metabolic terms and in structural alterations are few and their absence has and is being keenly appreciated. As is true of many of the medical specialties, there is little in ordinary civilian training that qualifies a pathologist to deal in the terms of reference just noted. The problems demand a new approach or perhaps a return to the old wherein naming a process was not enough.

Time does not permit more discussion of the manifold aspects of trauma. I can only note briefly the studies to evaluate the effectiveness of body armor and those which deal with the anatomic features of injury from cold.

COMMUNICABLE DISEASES

The communicable diseases have been few in number in Korea. One of the most serious, so far as loss of man-days is concerned, has been infectious hepatitis. This was apparently related to the plasma pools used early in the conflict. Follow-up studies have shown that about 22 per cent of the wounded who received both plasma and blood developed hepatitis in contrast to an incidence of 3 per cent in those wounded who received blood alone. The risk was appreciated early, but the plasma was required to save lives and was used until suitable replacement of stocks and of whole blood could be accomplished. Fortunately, the case fatality rate has been extremely low.

The newer antimalarials used prophylactically have been adequate to keep the disease under control with relapses occurring after withdrawal. These have responded to adequate therapy.

One moderate sized outbreak of Japanese B encephalitis has occurred. Studies previously had shown that for every recognized case, there were numerous inapparent infections, indicating that adult Americans showed a response similar to that of the indigenous population. There was no conclusive evidence that the current vaccine was of real value under the conditions studied, and its use has been suspended. The disease is mosquito-borne, and particular emphasis has been placed on mosquito control as a preventive.

Americans have encountered for the first time one of the group of hemorrhagic fevers of the Orient in troops in Korea. This syndrome has been by now the subject of several articles in the American literature, and most of its clinical features are known. Various names are used, the most common being epidemic hemorrhagic fever. Thus far, despite repeated efforts, the causative agent has not been characterized; there are no identifying laboratory tests; efforts to propagate in a large series of animals and other biologic systems have been unsuccessful; and there is no evidence that the antibiotics in any way modify the clinical course of the disease. The clinical course is marked by fever, hemorrhagic manifestations, an extremely labile blood pressure frequently resulting in a picture bearing certain similarities to surgical shock, alterations in the distribution of fluid in the various body compartments, and in the severe cases by oliguria or anuria, and the attendant uremia. The striking gross findings at autopsy include hemorrhage into the pituitary gland, subendocardial diatheses, and kidneys that have a gross similarity to those seen in posttraumatic renal failure. Treatment is thus far entirely symptomatic, and the administration of fluids must be accomplished with extreme care to prevent an overload of the circulatory system. Norepinephrine has been used with apparent relief of the lability of the blood pressure, but there is yet no evidence that the outcome is modified. The case fatality rate is probably about 5 per cent, and the incidence of disease is low. Epidemiologic features suggest strongly a vector of the chigger family, and control measures proved to be of value in scrub typhus have been instituted. Efforts to identify the etiologic agent continue, as do studies of the physiologic derangement. For many of the younger physicians, it forms the first

real example they have encountered of an epidemic disease which will not respond to chemotherapeutic agents and one that requires them to be physicians rather than apothecaries.

Other communicable diseases have been of low incidence despite reports of various outbreaks of epidemic proportion among the North Korean armies. Fear of plague, ever endemic in adjacent Manchuria, resulted in studies being conducted recently in Madagascar, where, in conjunction with French authorities, it was demonstrated that, when treated early (during the first twelve to sixteen hours), pneumonic plague responded to chloramphenicol and to Aureomycin.

The studies just described cause one to question the frequently encountered statements in the current medical literature that the communicable diseases are a thing of the past and that we must devote more and more of our time and energy to the problems of present day importance. Without in any way wanting to play the role of a Cassandra, I must point out that our current extensive sanitary safeguards may not always function as adequately as they do at present and that there is no valid evidence that our people are any less susceptible to disease than they have been in the past.

CONCLUSIONS

I have outlined certain of the problems faced by the Army medical service, emphasizing those in the combat zone that have demanded and continue to demand the best that laboratory workers can give to them. I have not mentioned the multiple activities incident to normal hospital operation, for those are familiar to most physicians. I want to close this résumé with the perhaps repetitive statement that although pathologists and clinical pathologists are contributing materially to the solution of our present and anticipated military medical problems, there is a greater demand than is being met. The absence of suitable balance wheels in the investigative approach is manifest and stands as a challenge to all of us.

RESPONSIBILITY IN PREVENTIVE MEDICINE

MAJOR GENERAL PAUL H. STREIT, MC, USA, Washington, D.C.*

FOR more than three generations the United States Army has been in the forefront of progress in the field of preventive medicine. I need only name the illustrious Major Walter Reed and Major General Gorgas from the Army as examples of outstanding leaders in this field.

In World War II, military preventive medicine reached a high state of development. This was the first great conflict in history which was not followed by major epidemic diseases. The Army alone mobilized more than 10,000,000 men, some of whom served in the most unhealthful regions of the world; yet, in spite of this, the disease rates in this conflict were lower than in any former war in history. The disease death rate in World War II was only 0.6 per 1,000 per year as compared to 16 per 1,000 per year in World War I and 25 per 1,000 per year in the Spanish-American War. It is evident that this represented a real advance.

The mortality ratio indicated that World War II was the first major conflict in which more military personnel died from direct enemy action than from disease. In the Spanish-American War, 5 military personnel died from disease to every 1 injured by enemy action. In World War I, this ratio was reduced to slightly more than 1 fatality from disease to 1 resulting from enemy action. In World War II, deaths due to battle exceeded those caused by disease by a ratio of 17 to 1.

The control of malaria is a good example of the aggressive methods of effective control employed during World War II. Only a generation ago malaria, particularly in the South, was a major cause of chronic disability and economic loss. The United States Army in World War II conducted a gigantic mosquito control campaign in all military installations in the United States and in many overseas areas. It also arranged for similar work to be carried out by the Public Health Service in areas surrounding military camps. The low disease incidence rates in American troops resulting from this program proved the effectiveness of these measures.

Since World War II, the United States Public Health Service and many state health agencies have continued the drive to eradicate malaria. The methods employed, such as the use of DDT for house spraying and the utilization of various new malarial drugs, were chiefly those developed through military sponsored research. The effectiveness of this program has been outstanding, and during the year 1950 it is estimated that there were only about 20 cases of malaria

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**Commanding General, Walter Reed Army Medical Center.*

reported as contracted in all of the United States.

In my opinion the most significant medical development in the field of preventive medicine during World War II was the ability of members of the medical profession to mobilize the scientific and technical resources of the United States and their unselfish cooperation in the prevention of disease.

UNSOLVED PROBLEMS

A study of recent mortality experience compared with that at the beginning of the century shows striking advances in many fields, but it also highlights many unsolved problems. People are still dying of such things as venereal diseases and intestinal diseases, which are both preventable and curable. This shows the need for more effective application of the knowledge we already have as well as a need for more research aimed specifically at better lifesaving and prophylactic methods. Diphtheria, while spectacularly reduced in frequency, is still a threat to health and one which could be eradicated by more effective control. Although considerable research is being carried on, the problem of prevention of poliomyelitis still remains unsolved. Influenza, too, presents a major challenge. There are still an estimated one-half million active cases of tuberculosis in the United States. The insect-borne diseases of murine typhus, sylvatic plague, Rocky Mountain spotted fever, tularemia, and virus encephalitis are well known and all are preventable, but still inadequate progress has been made in the control of these diseases.

The responsibility of the medical profession to assume leadership in the prevention of disease and in public health is recognized more clearly each year. The American people, for whom the physician occupies a position of great responsibility and trust, look to us for such leadership.

ATOMIC ATTACK

In view of the threat of World War III, the services of physicians in preventive medicine are more urgently needed now than ever before. The health officer and the physician must be prepared to take action. They must plan against new conditions which may result from atomic attack and under which it may well be more difficult to cope with disease than under any circumstances experienced in the past.

We are here today because our ancestors were tough enough to survive their encounters with pestilence and plague. Those who by inheritance and constitutional weakness could neither adapt themselves to nor resist disease epidemics succumbed. Until several generations ago this elimination of the weak resulted in a more sturdy race, but this survival by selection is not generally applicable to the present generation. Many of us are survivors from infectious diseases because we have been artificially protected or have been kept from contact with these causative agents. This has been made possible in America through progress and developments in environmental sanitation, immunization, protection, and isolation of carriers, as well as in the treatment of diseases. As a result, we are each year producing a larger percentage of individuals who are natural survivors with immunity to disease, but are human beings susceptible to many disease agents and theoretically and actually constitute a large epidemic reservoir in America. Thus, in America there exists today a grave epidemic threat for certain diseases if the present preventive medicine system established through the years should falter or fail through forces beyond our control, such as atomic bomb attacks upon cities.

Interesting studies of the bombing effects on health and medical care have been made among German civilians in Germany. These studies were detailed, scientific, statistical surveys, particularly of cities in Western Germany. Typical industrial and rural areas were examined by expert survey teams who studied existing health conditions and interpreted them in the light of four years' war experience. The possible effects of strategic bombing raids, particularly on the status of general health, were kept in mind.

The allied bombing efforts were never directed at breaking the health of the German people, but rather toward reducing their industrial capacity. Nevertheless, in many cases, bombing did raze thousands of homes, creating conditions which interfered seriously with the maintenance of health. The most acute conditions of overcrowding ever encountered in the western world resulted. City sewerage and water control gradually deteriorated. Medical care was inadequate and there was a general lack of drugs. During the final years of the war, when the average daily caloric intake of the German population dropped to 1,000 calories or less, partial starvation also became an added problem.

This experience in Germany differs in one significant respect from possible future atomic attacks on our own cities in that both Germany and England had time for careful preparation before the beginning of actual attacks. Even after bombing raids began, there was a longer or shorter period before the raids on many cities reached maximum intensity. This time element, which afforded further opportunity to modify and perfect the systems of medical care and disease prevention in those areas, would not exist if atomic weapons were used.

The magnitude of the attacks is illustrated by the number of casualties which occurred in some of these cities. Hamburg, alone, for example, in the month of July, 1943, had 60,000 dead. A number of other pop-

ulation centers had somewhat similar experiences. Compare this to the Texas City disaster in 1947 in which 512 were killed and 3,000 injured. As bombing of the cities continued, the lowering of health and the environmental and sanitation facilities in these cities and rural areas caused a gradual rise in practically all infectious diseases.

TABLE 1.—*Annual Case Incidence of Typhus Fever, Scarlet Fever, Diphtheria, Typhoid Fever, and Dysentery in German Cities.*
(Rates per 100,000 population—annual basis.)

Disease	City	Year				
		1938	1940	1942	1943	1944
Typhus fever	Magdeburg	0.00	0.00	1.16	0.89	39.28
	7 cities	0.00	0.00	0.23	0.65	5.51
Scarlet fever	Kiel	262.12	322.13	753.11	465.51	374.77
	7 cities	200.65	256.00	652.92	505.31	341.64
Diphtheria	Hamburg	201.25	253.33	246.98	272.85	341.94
	7 cities	263.00	281.01	280.70	277.15	351.05
Typhoid fever	Bochum	3.82	4.84	4.23	14.68	10.50
	7 cities	3.47	2.92	3.65	4.77	3.83
Dysentery	Duisburg	5.73	12.74	50.37	38.23	32.73
	6 cities	13.42	26.61	25.14	18.48	12.88

After unpublished reports in the Office of the Surgeon General.

I present a number of these statistics from official documented reports (tables 1 and 2). It is believed that because of the disorganization and confusion of the period, however, the rates as reported in these tables are probably considerably lower than the true incidence of disease.

TABLE 2.—*Annual Mortality from Scarlet Fever in Thirteen German Cities.*
(Rates per 100,000 population—annual basis.)

City	Year				
	1938	1940	1942	1943	1944
Duisburg	6.41	6.25	19.72	8.03	13.97
Combined cities	1.73	2.60	9.08	7.08	5.94

After unpublished reports in the Office of the Surgeon General.

It is difficult in such a statistical study to evaluate accurately just how much of the increase in infectious diseases was a direct result of bombing and how much was due to other rigors of the war. These tables illustrate dramatically how a well-organized and scientific nation, with adequate time to prepare counter measures, gradually developed a serious disease control problem.

The infectious disease experience in Japan, following the Nagasaki and Hiroshima A-bomb attacks, is an example of effective control through organization. The overwhelming thermal and radiologic traumas in these cities, with the resulting large number of deaths, directed attention away from the infectious disease situation. Because of the confusion resulting from the atomic attack, disease statistics were never gathered with any accuracy. Competent observers, including American physicians, noted the magnitude of the problem and the grave danger to the whole population.

The United States Army, early in its occupation, set up vigorous health and welfare programs for the entire population. This resulted in a spectacular decrease in morbidity and mortality rates for many of the infectious diseases.

In the winter of 1945 and 1946, for example, in Japan there were 34,141 cases of typhus fever which in April of 1946 reached a peak morbidity rate of 146.9 per 100,000 per annum. In order to break the backbone of this epidemic, approximately 48,000,000 people were dusted with DDT in their home communities and over 8,000,000 in particularly sensitive areas were vaccinated. As a result, in 1948, the mean annual typhus fever rate fell to 0.6 per 100,000.

Similarly, the diphtheria rates fell from a peak of 129.9 per 100,000 in 1944 to 20.3 per 100,000 in 1948. The tuberculosis death rate of 280 per 100,000 in 1945 was reduced to approximately 180 in 1948. There were 17,000 cases of smallpox in 1946 as contrasted with only 29 in 1948.

This is an outstanding example of what can be accomplished in a country by mass methods in preventive medicine following the horrors and destruction of war. It should be remembered, however, that the materiel, the personnel, and the over-all supervision of the Japanese program came from the United States —a country which was able to remain economically sound and physically unchanged by the war. Without this aid, the Japanese government and its people could never technically or economically have applied the control measures necessary to bring about this tremendous decrease in morbidity and mortality rates.

THE FUTURE

In recent years there has been considerable progress in the organization of various health services as well as in civilian defense. In many communities these have been partially coordinated with other civilian defense activities, such as fire-fighting services, rescue services, and the organization of available transportation in the communities. Through the assistance of the federal government a good beginning has been made in the storage of reserve medical supplies, but there is still much to be done in this field.

The United States Army has been an important factor in the development of large scale organizational methods in chaotic conditions. In such civilian disasters as the Texas City explosion, the United States Army made a large contribution toward the restoration of order and the care of the sick and wounded. It must be evident, however, that in case of atomic war, American cities and communities cannot depend upon major assistance from the United States Army. The communities themselves will have to organize their own means of rehabilitation, and those commu-

nities which are now energetically and enthusiastically pooling efforts, experience, and knowledge in forming effective partnerships will be most ready to solve their problems in case of attack.

Preventive medicine, therefore, has a national character and a national responsibility, and leadership in this field, as I have already stated, must come from the members of the medical profession. The further development and progress of public health in the United States will not be automatic, but will be dependent upon an alert, progressive medical society and a large number of clinicians and investigators who will continue to work progressively on the many remaining problems in public health. The splendid medical schools and their faculties in Texas I am sure will provide the forward thinking leadership necessary to help solve the problems of this atomic age.

REFERENCES

1. Bierring, W. L.: Practicing Physician and Public Health, Illinois M. J. *100*:344-348 (Dec.) 1951.
2. Co-Operation Between Public Health Service, General Practitioners and Hospitals, Public Health, London *65*:150 (June) 1952.
3. Cozart, W. S.: Suggestions for Improvement of General Practice, North Carolina M. J. *12*:25-28 (Jan.) 1951.
4. Filek, A.: As It Looks to Your State Board of Health; Opportunities for Physicians in Public Health, Wisconsin M. J. *50*:1205-1206 (Dec.) 1951.
5. Norton, J. W. R.: Joint Responsibilities of Public Health Workers and Private Practitioners, North Carolina M. J. *12*:287-290 (July) 1951.
6. Russell, E. L.: Private Practice—Health Department Relationships; How Can They Be Improved? California Med. *74*:171-173 (March) 1951.
7. Salcedo, J., Jr.: Role of Private Practitioner in Public Health Programs, J. Philippine M. A. *27*:352-356 (May) 1951.
8. Sellers, T. F.: Relation of Public Health and Medical Practice, South M. J. *44*:133-134 (Feb.) 1951.
9. Simmons, J. S.: American Physician and His Opportunities for Increased Service Through Public Health, New England J. Med. *244*:699-704 (May 10) 1951.
10. Williams, H. M.: Public Health and General Practitioner, J. Nat. M. A. *44*:142-144 (March) 1952.

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ABSTRACT OF DISCUSSION

BRIG. GENERAL (RET) ROY C. HEFLEBOWER, Houston: The achievements in preventive medicine which General Streit has given are factual; they require no comment. The problems at present unsolved and those which will confront us in the event of atomic attack are being continually stressed. I agree with General Streit that the responsibility of the medical profession to assume leadership in the prevention of disease is recognized more clearly each year. We have made phenomenal strides, but there is a question as to whether or not our progress is keeping pace with the tempo of this fast moving age. General Streit's topic is provocative of a careful inquiry by each of us to determine whether or not we, both individually and collectively, are doing all we can in the discharge of our responsibilities in the field of preventive medicine.

That famed specialist in preventive medicine, Dr. Milton J. Rosenau of the United States Public Health Service, wrote in effect: "Public health education is fundamental. We must have those who have the knowledge and then diffuse that knowledge. Public health authorities should take a leading part in diffusing knowledge concerning health and the prevention of disease, but the education must begin in the home and be continued in the schools from kindergarten to university."* Who is better qualified than the family physician to guide the teaching of health subjects in the home? Who can exercise greater influence than the medical profession to have proper and adequate public health education added to the curriculums of our schools?

Venereal disease was listed as one of our unsolved problems. It can be proved that education in sex hygiene results in reduction in the venereal disease rate. I know of an experience in World War II in which more than 175,000 men who received organized sex hygiene instruction had a venereal disease rate more than one-third lower than other thousands who lived under the same environmental conditions but did not receive the same type of instruction. It is true that there is much controversy as to where and by whom such instruction should be given. It is equally true, however, that every boy and girl, before reaching puberty, should have a knowledge of sex, and every man and woman before the marriageable age should be informed regarding reproduction and the dangers of venereal disease. We of the medical profession have the knowledge and a definite share in the responsibility to work out and establish the proper means of diffusing such knowledge. Are we doing our full part?

General Streit's reference to tuberculosis reminds us that with the great increase in longevity, we are today faced with the problem of increasing the vigor af our fight against the ravages of all chronic diseases, particularly the chief killers —heart disease and cancer. Mass measures of prevention, such as vaccination, rodent extermination, and insect control, which have accomplished miracles in the past, will not be equally effective with these chronic diseases. Here, preventive measures must be applied on an individual basis, and thus prevention becomes the immediate and direct responsibility of the practicing physician. Early diagnosis of such conditions is our greatest hope, and this can be accomplished only through the means of the periodic and thorough physical examination. If we do not permit ourselves to become so engrossed in diagnosis and treatment after disease has become established that we find little or no time for prevention, there will be no problem in providing these periodic examinations for our own private patients.

But, what of the masses in the lower economic levels who do not have their own physicians and who are daily being subjected to propaganda through the press, radio, and television advocating regular periodic physical examinations? Should we not now be making a strenuous and organized effort to make the educational programs more sound, more realistic? Should such educational programs not be stressing the fact that the success of the periodic physical examination is dependent upon the patient-physician relationship? And should we not now be working with public health authorities and welfare agencies to provide some system by which those unable to pay for such examinations can obtain such services from the practicing physician of their own choice, and he be remunerated from other sources?

These are but a few of the questions each of us, specialist or general practitioner, should be asking himself. Dr. Herman E. Hilleboe, commissioner of health for the state of New York, recently wrote, "Public health is at the crossroads. We must now choose the direction that we shall take in the future, or it will be taken for us.... Today, we who are dedicated to the health and welfare of the people face greater challenge than ever before."† The one and only road

*Rosenau, M. J.: *Preventive Medicine and Hygiene, ed. 6, New York, D. Appleton-Century, 1935, p. 661.*

†*Hilleboe, H. E.: Public Health and Medicine at Crossroads, Pub. Health Rep. 67:767-771 (Aug.) 1952.*

to success in this field of endeavor demands concerted, intelligent, and unselfish effort with mutual understanding and cooperation on the part of public health officials on the national, state, and local levels, medical societies, medical schools, hospitals, health centers, and last but by no means least, each and every practitioner of medicine. No one of us can escape a share in this great responsibility.

Dr. Leonard A. Scheele, surgeon general of the Public Health Service, in a recent address,* used an unidentified passage which had been previously quoted by Dr. Parker Kitchens: "History shows that great economic and social forces flow like a tide over communities only half conscious of that which is befalling them. Wise statesmen foresee what time is bringing and trying to shape institutions and mold men's thoughts and purposes in accordance with the change that is silently coming."

If General Streit's message results in making us better public health statesmen, each more ready, more willing, and more determined to accept his share of responsibility, then it will have received the response which is its just due.

*Scheele, L. A.: Public Health Statesmanship. Pub. Health Rep. 68:1-11 (Jan.) 1953.

Electrocardiographic Changes in Relation to Serum Electrolyte Values in Infantile Diarrhea

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PRESENT-DAY therapy of severe dehydration associated with infantile diarrhea demands a knowledge of the serum electrolytes which are important in the regulation of acid-base equilibrium in the body. Until a few years ago only the carbon dioxide combining power and the chloride of the serum were considered of importance; however, now Darrow[7] has demonstrated the large amounts of body potassium which may be lost and the value of potassium in the treatment of infants with severe and prolonged diarrhea. Although accurate methods of analysis for serum potassium are available by chemical means and by the flame photometer, few hospitals are equipped for these routine determinations. Hence the physician often hesitates to utilize fully the benefits of potassium therapy.

It is the purpose of this paper to show the value of electrocardiographic changes which occur in relation to changes in the serum electrolytes in infantile diarrhea. Characteristic electrocardiographic abnormalities have been reported in the hypokaliemia of various disease states. During attacks associated with low levels of serum potassium in familial periodic paralysis, Stewart, Smith, and Milhorat[17] found marked changes in the electrocardiogram consisting of low broad T waves, prolongation of P-R, QRS, and Q-T intervals, and alterations in the form of the R-T segment. Bellet and Dyer[4] noted electrocardiographic changes in all 17 of their patients during and after emergence from diabetic coma, but did not realize at the time the relationship between the electrocardiographic abnormalities and the low serum potassium level. Frequently the changes they observed did not occur until after the patients were recovered from acidosis. Martin and Wertman[14] in their study of serum electrolytes and electrocardiograms in diabetic coma related the S-T depression to acidosis and the length of the Q-T interval to the serum potassium and calcium. They found a high degree of correlation between low T waves and decreased serum potassium. Gamble, Wiese, and Hansen[12] reported a case of an 8 months old infant with long-standing diarrhea who had a very low level of serum potassium. Electrocardiograms revealed low broad T waves and S-T segment depression. These authors noted that improvement of the tracing lagged behind the return to normal of the serum potassium. Bellet and associates[5] observed abnormalities in the electrocardiograms of 79 patients with hypopotassemia resulting from various conditions. They related the T wave changes, S-T segment depression, and prolonged Q-T interval to a low level of serum potassium and found a significant statistical correlation between the length of the Q-T interval and the serum potassium concentration. Eliel and Pearson[9] studied the potassium deficit in postoperative patients with metabolic alkalosis. In general the disappearance of electrocardiographic abnormalities paralleled the restoration of the serum potassium level to normal. Lowered amplitude of the T wave was correlated with alkalosis and hypochloremia. It was concluded that in certain cases the electrocardiogram may be a better index of tissue potassium deficit than the serum potassium level. In 1 case of idiopathic steatorrhea and 2 cases of ulcerative colitis McAllen[15] observed that a prolonged Q-T interval is not commonly associated with decreased serum potassium. Currens and Crawford[6] from their

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study of hypokaliemia presented indirect evidence suggesting that electrocardiographic abnormalities correlated better with intracellular than extracellular potassium.

The most marked and consistent alterations in the electrocardiogram associated with hypokaliemia involve the T wave, the S-T segment, and the Q-T interval. It must be pointed out that these same portions of the electrocardiogram also are influenced by other factors. Low levels of serum calcium[2, 11] result in prolongation of the Q-T interval; this is due to lengthening of the S-T interval rather than the broadening of the T wave which is characteristic of low levels of potassium. Semistarvation,[16] per se, produces pronounced slowing of the heart rate, low voltages, and increased duration of electrical systole. However, the increased duration of the Q-T interval always lags behind the slowing of the heart rate so that abnormal prolongation does not occur. Acidosis[3, 14] has been reported to cause depression of the S-T segment and peaking of the T wave, whereas alkalosis is accompanied by decreased amplitude of the T. The T wave, S-T segment, and the Q-T interval are affected by severe anemia.[10, 20] Avitaminosis[18] is associated with prolongation of the Q-T interval. The sodium level, per se, generally is considered not to affect the electrocardiogram.[5]

Although sporadic reference has been made to electrocardiographic aberrations in diarrheal states, no large number of cases with serial tracings have been reported in infantile diarrhea. We have carried out such a study with the idea of determining the feasibility of using the electrocardiogram as an index of hypokaliemia in severe and prolonged diarrhea. The availability of the electrocardiogram would suggest it as a practical adjunct in the management of such patients.

MATERIAL AND METHODS

The study reported here includes 48 infants with diarrhea who were admitted to the Children's Hospital of the University of Texas Medical Branch during 1949. The ages ranged from 3 weeks to 2 years with 34 males and 14 females. There were 42 white infants and 6 Negro infants included in the study. As soon as possible after admission an electrocardiogram from a portable machine and blood for serum electrolyte determinations were obtained. The routine tracing consisted of the three standard leads I, II, and III, and precordial leads 2F and 4F. During the latter part of the study the V leads (V_1-V_6) were substituted for the precordial leads. At various intervals thereafter, usually daily, repeat studies were made. One hundred forty-six electrocardiograms with corresponding serum electrolyte tests were obtained on the 48 infants. The therapeutic regimen was essentially that of Darrow[7] as described recently by Hansen and associates.[13]

The criteria for the upper limits of normal of the Q-T interval of the electrocardiogram based on rate are those of Ashman and Hull.[1] Detailed analysis of the waves and intervals and their correlation with the serum electrolytes will be presented in a subsequent publication.

RESULTS

The relative degree of dehydration of the 48 infants as judged from a clinical viewpoint were as follows: 7 slight, 14 moderate, and 27 severe. The duration of the diarrhea at the time the patients became available for study varied from eight hours to one month. A history of vomiting frequently was present, and a number of the infants were suffering from prolonged malnutrition in addition to acute diarrhea.

A low serum potassium level was found in 36 of the 48 infants at some time during their illness; all 36 had corresponding abnormal electrocardiograms. The serum potassium was between 3.0 and 4.5 milliequivalents per liter in 20 patients, between 1.0 and 3.0 in 14, and less than 1.0 in 2.

Of the 15 patients on whom only one electrocardiographic tracing was obtained there were 8 with low serum potassium levels. The tracings in all 8 subjects revealed abnormalities and are included in the 36 previously mentioned. In the remaining 7 patients who had normal or high serum potassium values at the time of admission, 3 had normal electrocardiograms and entirely normal electrolyte values and 3 had abnormal tracings associated with moderate acidosis. In 4 of these 7 patients subsequent serum electrolyte determinations after the state of hydration had improved revealed low levels of potassium. Had electrocardiograms been obtained at this time, changes of hypokaliemia probably would have been manifest.

Specific electrocardiographic abnormalities and their frequency as found in the 36 patients with low serum potassium values are given in table 1.

TABLE 1.—*Specific Electrocardiographic Abnormalities Versus Low Level of Serum Potassium in 36 Infants with Diarrhea.*

ECG Abnormality	No. Patients
Prolonged P-R interval	3
Prolonged Q-T interval	19
S-T segment:	
Depression	26
Elevation	12
T-wave changes	36
Rhythm disturbances	2

It will be noted that disturbance of A-V conduction as evidenced by a prolonged P-R interval was observed in only 3 patients. Furthermore, it was never

marked, had no relationship to the degree of hypokaliemia, and tended to disappear rather quickly with the institution of therapy.

Prolongation of the Q-T interval occurred in 19 of the 36 patients in one or more tracings. In general, prolongation of the Q-T interval was found in moderate to severe hypokaliemia. There was a relatively good correlation between the extent of the prolongation of the Q-T interval and the degree of serum potassium deficit. Acidosis and severe dehydration appeared to accentuate this disturbance of the Q-T interval. In several instances serum potassium levels between 4.0 and 4.5 milliequivalents per liter were associated with a prolonged Q-T interval, normal serum calcium values, and moderate to severe acidosis and dehydration.

Depression of the S-T segment of varying degrees was present in 26 infants and elevation in 12. At times in the same tracing, depression was noted in some leads and elevation in others. It was not possible to correlate the degree of S-T depression or elevation with the serum potassium level. Acidosis tended to aggravate the S-T depression associated with hypokaliemia, and frequently acidosis alone resulted in slight to moderate S-T segment depression. The right ventricular precordial leads seemed to be the most sensitive regarding S-T segment changes; however, often these leads were not satisfactory for accurate evaluation because of a wandering base line which resulted from the inability of the infants to cooperate.

T wave abnormalities were the most frequent of all changes noted in our patients. The electrocardiograms of all 36 infants with low serum potassium levels revealed T wave changes, and on the whole the lowering of the amplitude and the increased width of the T wave corresponded to the degree of hypokaliemia. Moderate T wave changes consisting of slurring and decreased amplitude or slight broadening and flattening were frequently present at the time of admission of the patient. These changes were associated with normal serum potassium values but with moderate to severe acidosis and dehydration. If after hydration the serum potassium fell, the T waves became lower and broader. Abnormalities varied from slight broadening and flattening in patients with mild hypokaliemia to broad, flat, and even inverted T waves in instances of severe hypokaliemia.

Prominent U waves were noted in a few instances of moderate to severe potassium deficit when the heart rate was rather slow, but these generally were obscured when the heart rate was rapid. Rhythm disturbances were noted in only 2 infants. These consisted of occasional and transitory blocked atrial contractions.

The relationship of abnormal electrocardiograms to disturbed electrolyte patterns as found in 43 infants at various times during their illness is given in table 2.

TABLE 2.—*Abnormal Electrocardiogram Versus Serum Potassium in 43 Infants with Diarrhea.*

Serum Potassium		Calcium		ECG Abnormal
Normal:	Acidosis—11 patients	Normal	3	2
		Low	1	1
		Undetermined	7	6
Low:	Acidosis—33 patients	Normal	11	11
		Low	8	8
		Undetermined	14	14
	Alkalosis—10 patients	Normal	4	4
		Low	5	5
		Undetermined	1	1

Five infants were excluded from this analysis because in each only one electrocardiogram was obtained and this was at the time of admission to the hospital. Two of these patients had moderate elevation of serum potassium levels with questionable electrocardiographic abnormalities; 3 had normal electrolytes and normal tracings. It will be noted that the table gives electrolyte patterns as related to abnormal tracings. Any one patient may be represented in one or more of the groups depending upon the electrolyte patterns shown during the course of his illness.

The acidotic group with normal serum potassium consists of (1) slightly to moderately dehydrated patients with diarrhea of short duration in whom hypokaliemia was not found and (2) infants with more severe dehydration and acidosis who developed low serum potassium levels after the state of hydration improved.

The acidotic group with hypokaliemia includes three types of patients: (1) those from the second type of the acidotic–normal potassium group just noted; (2) patients with slight to severe dehydration on admission whose diarrhea was of relatively short duration (in these patients the electrolyte pattern progressed to normal under therapy; however, the acidosis, in general, tended to disappear before the hypokaliemia); and (3) those infants with slight to severe dehydration on admission but whose diarrhea had been of relatively long duration (as rehydration was accomplished these patients developed an alkalosis).

The alkalotic group with low serum potassium values includes: (1) those from the third type of the acidotic–hypokaliemic group just noted and (2) patients with prolonged diarrhea and mild to severe dehydration at the time of admission (in these infants alkalosis at first increased with rehydration, returning to normal along with the serum potassium).

It is apparent from table 2 that the serum calcium level did not appear to affect the frequency of electrocardiographic abnormalities in our patients with or without hypokaliemia. Actually, even though several

patients had rather low serum calcium values, in no instance could electrocardiographic changes definitely be attributed to hypocalcemia. The lowest serum calcium values were found in the patients with rather low serum potassium. It is possible that the hypokaliemia masked the electrocardiographic changes of low serum calcium.

The first electrocardiogram was not obtained until eighteen hours after admission (fig. 1). At this time the serum potassium level was normal; however, a moderately severe acidosis persisted and the patient's state of hydration still was rather poor. The electrocardiogram revealed low broad T waves with prolongation of the Q-T interval and no S-T segment. The J junction was slightly depressed in leads II and III and considerably depressed in 2F and 4F. On June 27, at which time the serum potassium level had dropped to 2.9 milliequivalents per liter, a heart rate of 167 per

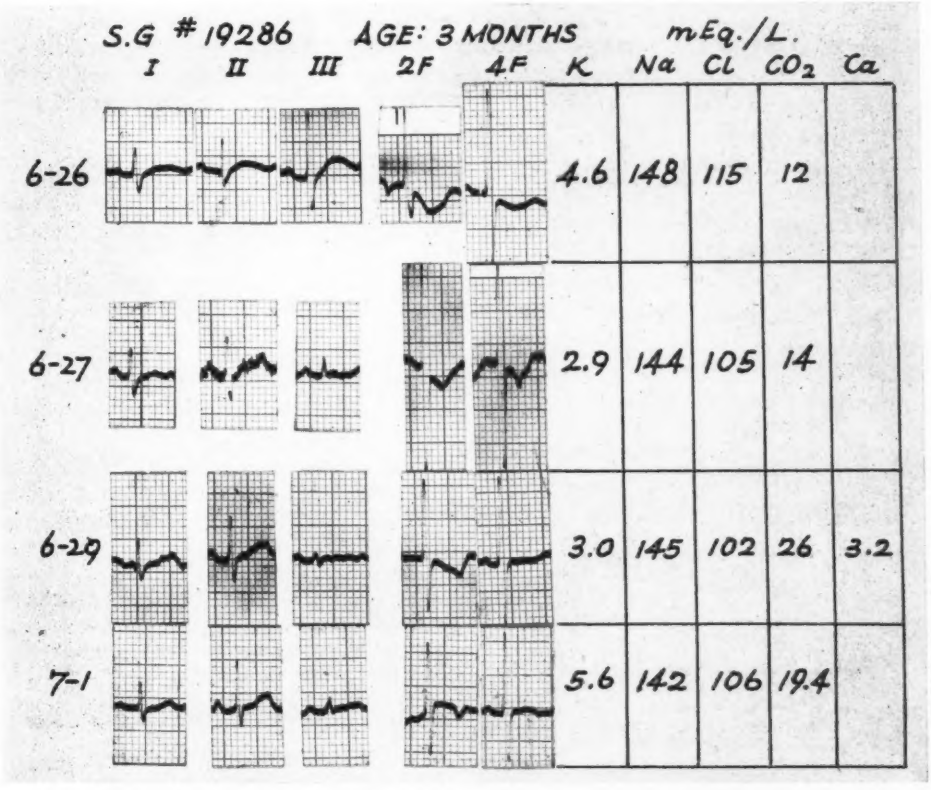

FIG. 1. Serial electrocardiographic tracings on an infant with acute diarrhea of short duration.

CASE REPORTS

As examples of the electrocardiographic changes in severe diarrhea, case histories and tracings obtained in 2 of our patients are presented.

CASE 1.—A 3 months old Latin American boy was admitted to the hospital June 25, 1949, with the history of high fever, diarrhea, and vomiting of three days' duration. There had been 10 to 15 green liquid stools daily and the infant had taken only 3 ounces of fluid during the twelve hours prior to admission. The patient was listless, responded poorly to stimuli, and was markedly dehydrated. His eyes were sunken, and respiration was deep and labored. Serum electrolytes at the time of admission were determined as follows: carbon dioxide combining power 5.1 milliequivalents per liter; chloride 116 milliequivalents per liter; and sodium 133 milliequivalents per liter. Serum potassium was not measured.

minute tended to obscure the T wave changes, and it was impossible to measure accurately the Q-T interval. Subsequent serum electrolyte determinations and tracings revealed a gradual return of the electrocardiogram to normal along with serum electrolytes. It is to be noted that a serum calcium of 3.2 milliequivalents per liter on June 29 had no characteristic effect on the electrocardiogram.

CASE 2.—A 6 months old white girl was admitted to the hospital May 12, 1949, with a history of 8 to 10 loose yellow to green stools daily for approximately one month. The patient had continued to take her feeding well until forty-eight hours prior to admission, at which time the frequency of stools increased to 18 to 20 daily. Physical examination revealed a cyanotic moribund infant wtih marked dehydration and cherry-red mucous membranes. Respirations were irregular but not labored. Values of serum electrolytes at the time of admission are listed in figure 2. The electrocardiogram (fig. 2) taken at this time revealed broad and low to

slight inversion of the T waves in the standard leads and depressed S-T segments with diphasic T waves in 2F and 4F. The Q-T interval was markedly prolonged. The heart rate of 118 per minute was rather slow considering the condition of the patient. The electrocardiograms taken May 12 and 13 revealed the typical broad and flattened T waves which we noted in the patients with extreme hypokaliemia and alkalosis. Twenty-four hours after admission the patient's condition was considerably improved; however, she remained listless and was unable to hold her head erect.

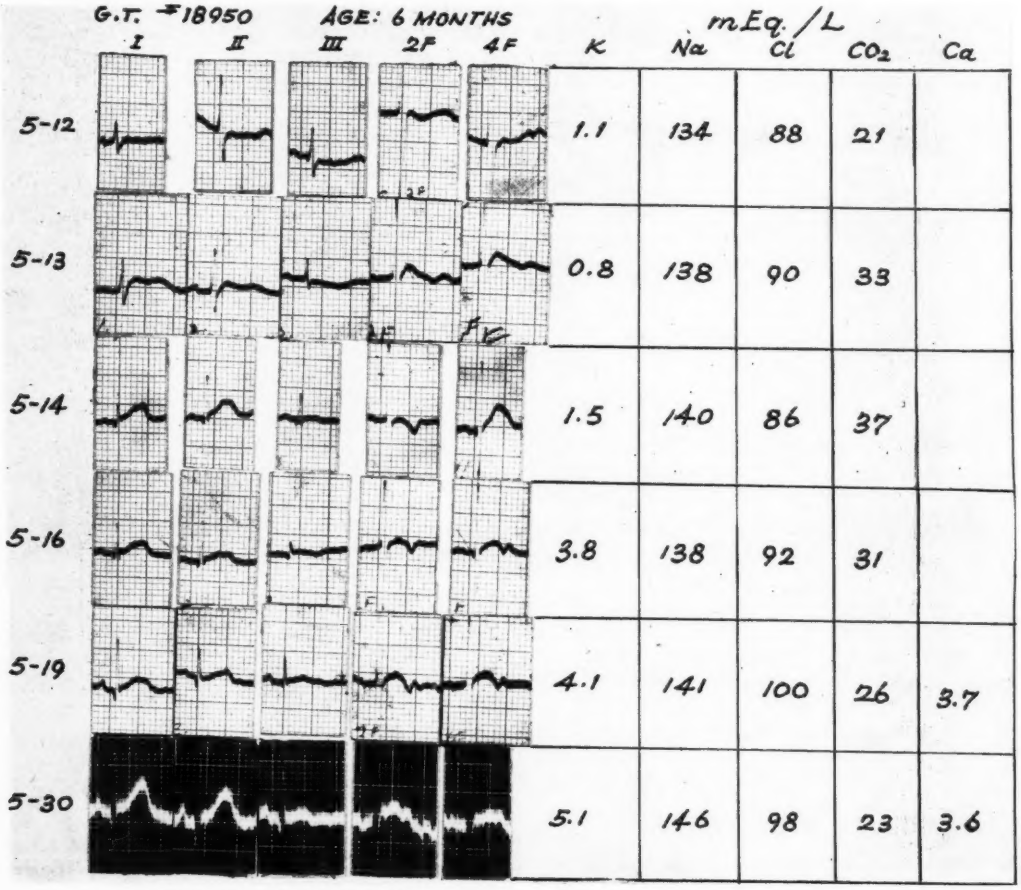

FIG. 2. Serial electrocardiographic tracings on an infant with diarrhea of one month's duration.

Over a period of approximately ten days the patient's condition gradually improved and the serum electrolytes and the electrocardiogram returned to normal.

DISCUSSION

This study of electrocardiographic abnormalities associated with disturbed serum electrolytes in infantile diarrhea in general agrees with similar studies in adult subjects suffering from various conditions leading to electrolyte imbalance.[4, 5, 14, 17] T wave changes, S-T segment depression and elevation, prolonged Q-T interval, and at times prominent U waves were the only significant electrocardiographic changes noted that could be attributed to hypokaliemia. Of these, only the T wave and the Q-T interval changes corresponded to the degree of serum potassium deficit. The S-T segment changes appeared to be influenced greatly by the degree of acidosis, and the most marked S-T segment abnormalities were seen not in instances of extreme hypokaliemia but in cases of moderately low levels of serum potassium associated with severe acidosis. This would agree with the conclusions of Martin and Wertman,[14] who related the S-T depression to acidosis.

From our study the T wave abnormalities appear to be the most reliable index of the presence and degree of hypokaliemia. Factors other than hypokaliemia, such as reduced serum calcium and severe anemia, are known to affect the T wave, and these conditions were operative at times in some of our patients. However, their influence was never of such a

degree as to render the electrocardiogram invalid as an index of low serum potassium. Even though several patients had low serum calcium values, there were no typical changes of hypocalcemia in the electrocardiograms. A low serum calcium level was always associated with rather marked hypokaliemia, and this probably masked the electrocardiographic evidence of the hypocalcemia. As many of our patients were given calcium by mouth as soon as oral fluids were tolerated, tetany as well as electrocardiographic evidence of the hypocalcemia may have been prevented.

Of the electrocardiographic abnormalities associated with hypokaliemia the Q-T interval is the only one which allows for accurate measurement for statistical correlation with the degree of serum potassium deficit. No such statistical analysis is included here but will be published later.

As to criteria for prolongation of the Q-T interval, the upper limits of normal according to rate of Ashman and Hull[1] were employed. Calculation of $Q\text{-}T_c$[19] in most of the electrocardiograms indicated prolongation of the Q-T interval of such frequency in instances of normal serum potassium as well as in cases of hypokaliemia as to render these changes of little value as an index of low values of serum potassium.

There have been reports[6, 9] suggesting that the electrocardiogram may reflect intracellular deficit of potassium rather than hypokaliemia. Balance studies together with analyses of heart and skeletal muscle from patients dying from diarrhea and from other conditions associated with loss of body potassium support evidence indicating that electrocardiographic abnormalities are related to serum rather than tissue potassium changes.[12a]

The electrocardiographic changes noted in patients at the time of admission even though the serum potassium was normal are attributable to the severe acidosis, dehydration, shock, and rapid heart rate which so frequently were present. In such instances the changes in the T wave and the Q-T interval were usually slight. The lag of the electrocardiographic abnormalities behind the return of the serum potassium to normal in a few instances of prolonged diarrhea with marked depletion of body potassium is difficult to explain. Perhaps there are changes in the metabolism of the myocardium which persist longer than the serum electrolyte disturbances. Darrow's work suggests even the possibility of minute areas of necrosis in the myocardium.[8]

We believe that the correlation between the electrocardiogram and the level of serum potassium in these patients with diarrhea has been good. It would appear that the electrocardiogram offers a feasible and practical method of following the potassium levels in patients with diarrhea, and thus can serve as a guide to management. It must be realized, however, that in view of the multiple factors which can affect the electrocardiogram, the interpretation and its use must be made in conjunction with a critical clinical evaluation of the patient.

SUMMARY

An analysis is made of the electrocardiographic changes in relation to the serum electrolytes in 48 patients with infantile diarrhea.

It was found that the electrocardiogram is a fairly reliable index of serum potassium levels when interpreted in the light of the clinical findings.

These findings would support the value of the electrocardiogram as a practical aid in management of severe dehydration and electrolyte disturbance associated with infantile diarrhea.

REFERENCES

1. Ashman, R., and Hull, E.: Essentials of Electrocardiography, ed. 2, Macmillan Co., New York, 1941.

2. Barker, P. S.; Johnston, F. D.; and Wilson, F. N.: Duration of Systole in Hypocalcemia, Am. Heart J. *14*:82-86 (July) 1937.

3. Barker, P. S.; Shrader, E. L.; and Ronzoni, E.: Effects of Alkalosis and of Acidosis upon Human Electrocardiogram, Am. Heart J. *17*:169-186 (Feb.) 1939.

4. Bellet, S., and Dyer, W. W.: Electrocardiogram During and After Emergence from Diabetic Coma, Am. Heart J. *13*:72-87 (Jan.) 1937.

5. Bellet, S.; Steiger, W. A.; Nadler, C. S.; and Gazes, P. C.: Electrocardiographic Patterns in Hypopotassemia: Observations on 79 Patients, Am. J. M. Sc. *219*:542-558 (May) 1950.

6. Currens, J. H., and Crawford, J. D.: Electrocardiogram and Disturbance of Potassium Metabolism, New England J. Med. *243*: 843-850 (Nov.) 1950.

7. Darrow, D. C.: Retention of Electrolyte During Recovery from Severe Dehydration Due to Diarrhea, J. Pediat. *28*:515-540 (May) 1946.

8. Darrow, D. C., and Miller, H. C.: Production of Cardiac Lesions by Repeated Injections of Desoxycorticosterone Acetate, J. Clin. Investigation *21*:601-611 (Sept.) 1942.

9. Eliel, L. P.; Pearson, O. H.; and Rawson, R. W.: Postoperative Potassium Deficit and Metabolic Alkalosis, New England J. Med. *243*:471-478 (Sept.); 518-524 (Oct.) 1950.

10. Ellis, L. B., and Faulkner, J. M.: Heart in Anemia, New England J. Med. *220*:943-952 (June) 1939.

11. Ernstene, A. C., and Proudfit, W. L.: Differentiation of Changes in Q-T Interval in Hypocalcemia and Hypopotassemia, Am. Heart J. *38*:260-272 (Aug.) 1949.

12. Gamble, A. H.; Wiese, H. F.; and Hansen, A. E.: Marked Hypokalemia in Prolonged Diarrhea; Possible Effect on Heart, Pediat. *1*:58-65 (Jan.) 1948.

12a. Gibbs, R. H.; Hansen, A. E.; and Wiese, H.: Unpublished data.

13. Hansen, A. E., and others: Infantile Diarrhea in Texas, Texas Rep. Biol. & Med. *10*:525-553 (Fall) 1952.

14. Martin, H. E., and Wertman, M.: Electrolyte Changes and Electrocardiogram in Diabetic Acidosis, Am. Heart J. *34*:646-662 (Nov.) 1947.

15. McAllen, P. M.: Electrocardiogram Associated with Low Levels of Serum Potassium, Brit. Heart J. *13*:159-166 (April) 1951.

16. Simonson, E.; Henschel, A.; and Keys, A.: Electrocardiogram of Man in Semistarvation and Subsequent Rehabilitation, Am. Heart J. *35*:584-602 (April) 1948.

17. Stewart, H. J.; Smith, J. J.; and Milhorat, A. T.: Electrocardiographic and Serum Potassium Changes in Familial Periodic Paralysis, Am. J. M. Sc. *199*:789-795 (June) 1940.

18. Stroud, W. D.: Diagnosis and Treatment of Cardiovascular Disease, F. A. Davis Co., Philadelphia, 1940.

19. Taran, L. M., and Szilagyi, N.: Duration of Electrical Systole (Q-T) in Acute Rheumatic Carditis in Children, Am. Heart J. *33*: 14-26 (Jan.) 1947.

20. Tung, C. L.; Bien, W. N.; and Ch'u, Y. C.: Heart in Severe Anemia, Chinese M. J. *52*:479-500 (Oct.) 1937; quoted in Ellis, L. B., and Faulkner, J. M.[10]

ABSTRACT OF DISCUSSION

DR. OLIVER HAROLD ROSS, Port Arthur: Dr. Gibbs and his colleagues have demonstrated well that the use of the electrocardiogram is a useful aid in management of infants severely ill with diarrhea, particularly in infants which show hypopotassemia.

The finding of good correlation between electrocardiographic abnormalities and the serum potassium level corresponds to the reports of studies done on adults and animals by various investigators. Therefore a study of this type on infants is particularly valuable.

The practical implication is that the electrocardiogram is a good guide as to both progress and therapy of the child with incipient or actual potassium disturbance, regardless of what the cause might be. This is particularly important in view of the fact that physicians have access to an electrocardiograph but that accurate serum potassium level determinations are difficult to obtain other than in teaching or research centers.

Although the electrocardiogram is generally a reliable clinical guide to the potassium electrolyte picture, no plan for any extensive electrolyte replacement could be considered safe without frequent total evaluation of the patient. This would include consideration of the clinical condition of the patient; the urine volume, specific gravity, and reaction; as well as serum analysis for chloride, carbon dioxide combining power, and when possible, sodium and potassium levels.

INDUSTRIAL MEDICINE

THEODORE M. FRANK, M.D., Texas City, Texas

ALTHOUGH a causal relationship between some illnesses and certain types of work has been recognized for centuries, serious attempts to prevent those illnesses are of fairly recent date. Industrial medicine, as we know it today, is of recent development, synchronous with the flowering interest in prevention of industrial illness. This interest is shared by industrial executives as well as physicians. Origin of the interest can be traced to several factors.

One point of origin undoubtedly lies in the compensation laws now so general throughout our nation. A fundamental philosophy of those laws is that, regardless of cause or fault, an industrial injury needs treatment, and the cost of treatment is properly a cost of doing business. This cost is passed on, in turn, to the customers in a higher sales price and is thus paid by the general public, but at least the victim is spared financial burden or disaster. From this viewpoint an industrial injury becomes an instance of waste, or inefficiency. Therefore, an executive wants the injured man made whole, but even more he wants prevention of similar occurrences in the future.

Other factors in this development of industrial medicine are employees' group insurance, sick leave policies of the forward-looking companies, and a change in social consciousness of our whole society.

Much good has resulted and there is clamor for still more development of industrial medicine. At the same time a danger should be recognized. In the desire to add to the worker's efficiency by providing more and more health services, it is possible to go too far. If a company were to take over the whole responsibility for its workmen's health, that would be a big step toward socialized medicine, with the bill being paid by the company instead of the state. Industrial physicians are aware of this danger. They draw a line. Medical care sufficient to make a healthier, happier workman is good business. Medical care of his private, nonindustrial life is the individual's responsibility and lies in the field of private practice. In general, industrial practice is largely preventive.

Companies which have invested millions in machinery to perform certain operations have long recognized the necessity and the economy of spending other large sums in care, maintenance, inspection, and lubrication, that is, the upkeep of these machines. Similarly, most companies now recognize that care of the human partner, the operator of those machines, pays dividends too. The situation is not completely parallel because the company owns the machines but not the man. It buys or rents the man's time and consequently does not have the full responsibility for the man. Yet without actual responsibility for the health of the man, the company has found that it pays to help him keep his health, not only by preventing illness of industrial origin, but also by various means to assist in preventing nonindustrial illness. In its larger aspect, then, industrial medicine today is largely prophylactic, to a lesser extent therapeutic.

INDUSTRIAL HEALTH SERVICES

An industrial medical department is charged with the responsibility of assaying the physical condition of each employee, both before he is hired and at regular intervals thereafter.

A physical examination together with laboratory and radiologic study is done before a new worker is assigned to his tasks. These examinations are repeated at regular intervals and the results communicated to

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the employee and no one else, except as may be necessary to insure his safety and that of his fellow-workmen. Actually this service occupies the greatest single time load in the day of many industrial physicians. Here is one of the finest opportunites for actual practice of preventive medicine. Many a case of incipient or actual hernia is reported to the employee long before he has become aware of its existence. Similarly, diabetes, tuberculosis, failing vision or hearing, early pterygium, and many other conditions are found and reported before they become serious. Hypertension and cardiovascular disease usually are found long before they are suspected by the patient and at a time when medicine has its best chance of helping.

Treatment of nonindustrial illness is on a sharply limited basis. Where an employee is trying to work with a bad cold and its attendant miseries, medication to make him more comfortable, more efficient, and less dangerous to his fellow-workers is considered to be ethical and indicated. Since hardly any of these patients would go to their own doctors for such conditions, intrusions into private practice can scarcely be charged. On the contrary, when these persons are found to have more serious conditions which require more than minor or "comfort" treatment, they are referred at once to their private physician. Often important time is saved for early treatment by encouraging them to go at once to their private physician.

Persons falling sick on the job are given prompt and competent consultation service. In my own experience many have been found to have appendicitis, pneumonia, lung abscess, and other acute and serious nonindustrial conditions, and the diagnosis made on the job has shortened the path to the employee's own doctor and definitive treatment, saving untold time, seriousness, and discomfort.

Industrial medical officers often consult with patients or their physicians on health problems of all kinds. Now and then the industrial health record adds historical material of great value to the private doctor's sources of information and hence aids in making a diagnosis. Roentgenograms, electrocardiograms, laboratory reports, blood pressure records in regular sequence down the years are frequently valuable in raveling some obscure condition. Often they are found in greatest regularity and detail in the industrial medical department.

Preventive inoculations are given only for those conditions which are likely to be encountered as a part of the work. Nevertheless, when requested by the private physician, the industrial physician is glad to give preventive or therapeutic injections for any condition. When the private physician wants his patient to receive injections, such as insulin, during the time the patient is at work, it is common for industrial medical services to give them as an agent of the private physician, as a service both to him and to the employee.

Therapy of industrial injuries is well recognized as a duty of industrial medical departments. While in some departments it is the only duty, the progress of safety efforts is good and constantly tends to eliminate this function. In some cases serious injury is so rare that the industrial physician sees very few cases that need complicated surgical or orthopedic procedures, and so he tends to refer these to the practitioners of these arts who are able to keep their hands in practice. This lack of surgical practice is probably a good thing, for it leads to the development of other new and vastly needed services.

Health advice to employees, especially from the positive, preventive side, is an educational process. This worthy effort is practiced with varying enthusiasm and success by industrial medical departments. One side of this educational effort is that of dietary advice and education.

Sanitation naturally falls under the view of industrial medical men. Also, the special watch that is necessary over the health of food handlers is the duty of the medical department.

Industry is awakening to the fact that it has many medical problems. Consequently the industrial physician is called on for medical advice by the company officials. Use of chemicals is increasing. Production of chemicals is increasing. Both of these bring many problems. Some are generally recognized; others are unknown even to industrial management. Some problems are in serious need of investigation. All of these facts underscore the importance to management of medical advice, an important function of industrial medical officers.

RESEARCH

Research is a challenge to many young minds in the field of industrial medicine.

What is the effect of carbon on the lungs? In medical school twenty-five years ago it was taught that carbon had no appreciable effect on lungs, other than to change their color. Probably that is true. Yet carbon is not necessarily always carbon. Depending on its source, what appears to be carbon may well be carbon plus. And in that "plus" could lie a world of difference in its effects. This is a problem challenging a number of investigators.

Fluorine in the form of hydrofluoric acid is an important catalyst in some hydrocarbon syntheses. Its effects on human and plant physiology may well be

great. Work is being pursued to determine what these effects are. Some human volunteers take fluoride salts. In one case certain office workers are hired to work in an atmosphere of hydrofluoric acid vapors of low concentration. The results of such investigations may be of far reaching importance.

Beryllium has provided an uncomfortable surprise, fortunately not of great importance in the number of persons involved but deadly serious to those unintentionally exposed. Controlled exposures are proceeding in an attempt to answer this riddle.

Cancer is receiving attention. Although it is well known that cancer is a disease process affecting all people and animals, and therefore essentially a non-industrial condition, from the time of Percival Pott, and later from experimental work done in this century, certain chemical substances of known formula have been shown to have a carcinogenic effect on skin of man and animals. This has led to intensive research into the whole subject of the contribution that may be made toward the development of cancer by agents from without the body, contaminants that may have carcinogenic effect. Of course, the vast majority of cancer cases develop spontaneously without any yet known agents. However, a few are reported as due to agents recognized recently. The first of this group was the cancer of scrotum in chimney sweeps, reported well over one hundred years ago. Another is a group of cases from chronically irritating agents such as roentgen ray and radium. Certain waxes have been implicated by mechanical blocking of skin glands. Chrome, arsenic, and radiation from certain mines seem important in a limited number of cases. Coal tars and certain of the higher boiling hydrocarbons are under investigation. Industrial medical officers are active in this research, which is proceeding at academic institutions in several parts of the country.

Few persons outside of industry have much idea of the tremendous expansion of industry, especially the chemical industry. Few realize that processes and products are developing faster than knowledge, specifically toxicologic knowledge, can be accumulated. A number of companies have highly trained toxicologists in their medical departments to try to keep abreast of these developments. New chemical agents, processes, and products may make our lives more pleasant, but they also may lead us through dangerous paths before reaching that goal. Industrial medicine is aware of these possibilities and is watching them with caution. It is wide-awake medicine; it is scientific medicine. Industrial medicine is making an important contribution to health on the 1952 medical scene.

PARTNERS IN HEALTH EFFORTS

Too little stress has been given to the unique opportunity for cooperation which development of industrial medicine has brought to society in the field of preventive medicine. For years the ideal of prevention all too often was honored chiefly by lip service. Nevertheless, there were some notable advances. Sewage disposal and water purification, quarantine for contagious diseases, and certain efforts toward education were developed and pushed by public health authorities. Syphilis control and other efforts have been added. The public health physician today is a stout partner in the triangle of effort. The private physician is another. His value has been recognized for many years.

The third partner is the industrial physician. He has consistent, well-kept records of each employee's health picture at regular intervals through the years. These records often prove to be valuable to the private physician, whose own records are deficient because his opportunity to examine his patient comes only when the patient is ill enough to seek his advice, and this seldom occurs at regular intervals. The industrial physician keeps up to date on many conditions which may contribute to illness and about which the private physician does not know. His efforts frequently bring to light diseases which require treatment, and then the employee is advised to consult his family physician.

Many employees see their industrial physician first on almost any health problem. One reason for this is financial. They may bring their problems to him without cost. However, they will not do so if they do not have trust, confidence, and respect for that industrial physician. Another reason for seeing the industrial physician first is that since they are at work during their private doctor's usual office hours, it is easier to drop in at the industrial medical department. Nor do they have to wait a long time to see the doctor at their place of employment, which happens frequently in the private doctors' offices. A good industrial physician will see them, hear their problems, advise, and counsel, but if the illness is not industrial in origin, he will refer the patients to their family doctor for treatment.

Medical service to the American public is now a three-branched effort represented by the public health physician, the private physician, and the industrial physician. And like a three-legged stool, who is to say which is the most important leg? In our highly industrialized civilization, it is becoming increasingly difficult to decide. Cooperation on the part of all three is making it increasingly unnecessary to decide.

Recognition also should be given to the develop-

ment of a body of information, skills, and techniques and the emergence of a new profession, industrial hygiene, which has advanced the cause of industrial health materially. Industrial hygienists use their instruments, knowledge, and skills to survey locations, atmospheres, and processes. They determine concentrations of chemicals and dusts and in fact, anything known or suspected of being dangerous to man or animals. Industrial medicine and industrial health owe much to this new profession. Chemical industry in particular has developed vastly but in relative safety because of the contribution of industrial hygienists.

SUMMARY

Maintenance of health in industry is the goal of industrial medical departments. Beside the industrial physician stands the usual well known and allied professions—psychiatrist, nurse, x-ray and laboratory technicians, social workers, and lately, the industrial hygienist. They are working together for a common goal. They are backed with the confident support of industrial management. Further development is expected. Our nation has received much from industry and expects still more. Industry has received much from industrial medicine and expects more. We in industrial medicine expect to meet the needs as they continue to develop.

Pan American Refining Corporation.

ABSTRACT OF DISCUSSION

DR. CARL U. DERNEHL, Texas City: A problem which frequently presents itself to the industrial physician is that of having to make a choice between preventive medical practice and, let us say, personnel medical practice. By personnel medicine I mean the investigation of the health problems of the employee and his family, occasionally on a therapeutic level, generally on a consultative level. In any "accepted" medical department, the pressure of personnel medicine soon forces preventive practices into the background. This is not good. Yet one cannot deny that worry over health problems often leads to unsatisfactory work performance, absenteeism, and high accident rates. The employee needs a means of solving his health problems. The industrial medical service offers a solution and is usually freely used at the expense of time otherwise spent in preventive medicine.

Dr. Frank has cited the rapid growth of the chemical industry. This growth has indeed been so rapid that knowledge of the toxic effect of new chemicals on the market lags far behind. Each year more new chemicals are produced than can be studied by all the investigative laboratories of governmental and private institutions, thereby placing a heavy burden upon the industrial physician. He must be constantly on the alert for potential and unknown toxic responses in men using these new materials. He must make and keep detailed medical records of all potential exposures so that the aggregate of knowledge can be used to develop the clinical picture of toxic exposures to new substances. Since the physician is dealing with unknown factors, he must make his investigations as inclusive as practical. Information not included in the original record is usually lost for all time. Here, too, the industrial physician renders a public service not often recognized. In the last analysis the true toxicity of a material is generally determined by its effect upon the man who makes and handles it. The accumulated knowledge of these effects is then used to protect the general public and other users of the compounds.

Limitations of time seem to have excluded a discussion of the role of the industrial nurse. Her activities are worthy of mention since she sees the great majority of patients in an active medical department. She must be able to inspire confidence or else the employee demands to see the physician for minor complaints not worthy of his limited time. The nurse must also be astute since she frequently decides which conditions require the attention of the industrial physician. Finally, the nurse must be discreet. Loose talk is not conducive to discussion of personal problems on the part of the employee.

Research on Gamma Globulin

The Public Health Service of the United States Department of Health, Education, and Welfare began in July a nationwide cooperative research effort to evaluate the use of gamma globulin against poliomyelitis. The program is in collaboration with the Association of State and Territorial Health Officers, the American Physical Therapy Association, and the D. T. Watson School of Physiatrics, affiliated with the University of Pittsburgh School of Medicine. The investigation was planned and will be reviewed by an advisory committee composed of seventeen leading authorities on poliomyelitis. The PHS's Communicable Disease Center at Atlanta, Ga., is coordinator of the program.

An essential feature of the program is an examination of each case in the study, from fifty to seventy days following onset of illness, by a trained physical therapist. These services are being arranged by the American Physical Therapy Association, aided by a grant from the National Foundation for Infantile Paralysis.

Dr. Leonard A. Scheele, surgeon general of the PHS, said in announcing the program, "In view of the scope and cost to the nation of producing and distributing gamma globulin, the Public Health Service feels a great responsibility to join with State and local health authorities to obtain, on a national scale, the maximum amount of useful information about this new polio weapon."

ESSAY CONTEST ON THYROID GLAND

The Van Meter Prize Award for the best essays submitted concerning original work on problems relating to the thyroid gland is again being offered by the American Goiter Association. The $300 first place prize and two honorable mentions will be presented at the annual meeting of the association April 29-May 1, 1954, in Boston, providing essays of sufficient merit are presented in the competition. A place will be reserved on the program for the presentation of the prize award essay by the author, and the essay will be published in the annual proceedings of the association.

Essays covering either clinical or research investigations should be at the office of the corresponding secretary, Dr. John C. McClintock, 149½ Washington Avenue, Albany 10, N. Y., not later than January 15.

The Role of the Psychiatrist in Special Problems Confronting the General Practitioner

NICHOLAS L. BALLICH,* M.D., Baltimore, Maryland

THE role of the psychiatrist in special problems confronting the general practitioner is at least fourfold: (1) that of a teacher, (2) that of a consultant with the general practitioner, (3) that of a therapist for referred patients of the general practitioner, and (4) that of an adviser to the general practitioner.

AS TEACHER

In the first role as a teacher the psychiatrist has an obligation and opportunity to impart his specialized training and knowledge to the general practitioner in individual, informal consultations as well as in more formal group sessions and lectures. Such liaison is time-consuming but invaluable, for it is a stimulating, enriching experience for the specialist and an essential for the general practitioner, who is certainly a busy person but always receptive to anything that will increase his knowledge and skill. Surely, it is admirable to render service, expertly and expediently, to needy human beings, but in teaching and research, I believe it is generally recognized, lie the real opportunities for more significant strides or advances in medicine. One must be careful, however, not just habitually to seek, and perhaps too often find, a faster treadmill.

Not the least important of these teaching opportunities has to do with preventive psychiatry. Family physicians occupy an enviably unique position in relation to patients. It follows closely, that their attitude, reaction, resistance, bias, and flexibility will determine how this challenge is met and dealt with. By preventive psychiatry I do not mean the significant, though sometimes rather dry, mental hygiene statistics, but instead a more vital, virile, practical approach (1) qualitatively through the early recognition and treatment of personality disorders with the objective of staving off more florid developments by the energetic management of individual cases and (2) quantitatively through the promotion of sounder mental health by education of relatives and members of the community. The first objective can be accomplished by surveillance of family members for pathogenic patterns, psychonoxious attitudes, and friction-producing interfamilial relationships. The second can be achieved through education of the general populace of the community by individual professional prestige and influence or through the various community organizations—scholastic, religious, and community or charitable.

The opportunities have been outlined—the general practitioner's obligation is either to recognize and take care of these psychogenic ills and psychodynamic problems by referring them to a competent psychiatrist for evaluation or, better still, to work hand in hand with the psychiatrist in determining how much the family doctor can do, utilizing what the specialist has to offer, and what the two working as a team can do in ferreting out and handling these problems.

One beautiful example of such teaching possibilities was that which utilized Diagnostic Clinic patients at the Johns Hopkins Hospital for the teaching of third year students of the Johns Hopkins Medical School, as well as providing excellent (and somewhat unusual) liaison with the referring physicians, both in the hospital environment and extramurally. Two students—their presence justified by designating them as student physicians, clinical assistants, or clinical clerks—sat in on each interview conducted by a senior psychiatrist on the teaching staff. The patients were fresh, there was opportunity for sharing, and the students welcomed the privilege of seeing firsthand how an interview situation got started, progressed, and concluded. The evaluation was sent with diagnosis and recommendations to the referring physician for enactment. The overall reaction on the part of all concerned has been gratifying and favorable. In modified form this method could be utilized in group practice and in areas where good cooperation exists between the psychiatrist, the several members of the specialties, and the general practitioner.

AS CONSULTANT

It has been my experience that the general practitioner wants to be taught useful diagnostic aids, but he is more vitally interested in learning what to do about the problem. He must deal not only with the symptoms but also with the complaint problem—by which is meant the ramifications of the problem and how it affects the person that has it, the people around him, and his life's situation.

As a consultant, the psychiatrist renders an invaluable service to the general practitioner. He should be used wisely to save much precious time. It is not sensible to seek the opinion of a consulting psychia-

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**Assistant Professor of Psychiatry, Johns Hopkins University Medical School, and (Visiting) Psychiatrist, Johns Hopkins Hospital.*

trist after the die has been cast, that is to say, after the patient's personal reaction has reached a more or less rutlike stage, at which time the most practical solution is likely to be long term therapy and perhaps psychiatric hospitalization for predominantly custodial care with perhaps a one in five chance for substantial improvement. Instead, through proper coordination and cooperation, with emphasis on early diagnoses and evaluation, tactical maneuvers may be made and suggestions for therapeutic strategy outlined with resultant economy of time and effort. Furthermore, an increased percentage of patients may be salvaged or prevented from developing more florid personality dysfunctioning by means of prompt recovery and early alleviation of symptoms.

All patients want to feel better but fewer are interested in really doing something about it. In this sphere the psychiatrist, with greater experience and perspective, may be able to understand a particular issue or theme in the patient's life, and through sincere appreciation incorporated with adroit psychiatric interviewing succeed in letting the patient go through a corrective, emotionally maturing experience which will permit him to return to the general practitioner in a far better emotional state. The patient often may be symptomatically improved, and he may be prepared either not to make anything more of his problem or to put some of the finishing touches on a stabilizing procedure that goes along with his getting used to feeling better. At this point the general practitioner's attitude and approach is particularly important. If he is understanding, believing, and willing to take his cues from the patient, chances are that everything will work out all right. If he is impatient, skeptical, or too critically questioning, the chances are good that he may see the reaction a little more clearly as it blows up in his face, but be unable to do much about what is going on.

At other times a consultant may be helpful in supporting the general practitioner's contention that psychiatric treatment is desirable. Such a bolstering may allay the anxiety of uneasy relatives and pave the way for the psychiatrist to undertake the treatment program if he is desirous of doing so and the referring physician and family are receptive to the idea. Or he may make appropriate suggestions and referral either to another psychiatrist for out-patient treatment or to a good psychiatric hospital for in-patient therapy.

Simply referring the patient to a psychiatrist will not by itself get the job done, for there simply are not enough psychiatrists to go around. Then, too, many of the problems can and should be handled by the general practitioner, who, in many instances, may be the most desirable therapist. The liaison with a psychiatric consultant, however, may provide just the opportunity that is needed to determine, when doubt and uncertainty exist, which problems can and should be cared for by the general practitioner. Certainly the latter will not wish to treat all the psychiatric problems he encounters, but he may well wish to treat the simpler ones and may do it more competently if he has had the benefit of a closely coordinated contact with a friendly psychiatrist. Perhaps just the knowledge that help is available will permit him to function more confidently. The psychiatrist need not always help, but he certainly can advise, and that may be even better in meeting the overall requirement.

Pertinent advice at the right time may save much valuable time and eliminate a great deal of distress. When the door is closed tightly it cannot always be opened too easily. It is not sensible nor constructive to wait until one is dealing with a more or less fixed psychoneurotic pattern and then refer the patient to a psychiatrist in order to find out what should have been done. It is easy to get so busily engrossed in treating symptoms that one tends to forget about and neglect the person that has them. Actually, when one is confronted with a patient who is so inconsiderate as not to get well, the doctor is apt to get more preoccupied with the broader concepts, and personality functioning comes to the forefront and assumes more importance.

Writing recently in the *Bulletin of the New York Academy of Medicine,* Kubie presented in a shockingly vivid way the story of a woman whose problem started with a simple stomachache when she was 11 years old. She went to a hospital, where aspirin and a psychiatric consultation were recommended. The aspirin worked for a while, but later the persistent stomachache returned. Thirty-five years later, after a tour of hospitals, 9 abdominal operations, and 5,600 hours of free medical attention without finding any physical basis for her aches and pains, the patient decided to utilize the second recommendation. It was too late. The simple psychogenic stomachache had progressed until the patient was hopelessly invalided, and every problem in her life brought gastrointestinal distress. I venture to say almost every physician can recall in one form or another a strikingly similar case. Perhaps it is not too bold to say that much of what was not helpful and even destructive could have been avoided and that much of the personal reaction could have been prevented or modified by early, well directed psychotherapeutic care.

General practitioners have the responsibility of seeing to it that such waste does not occur by avoiding misdirected effort and by seeing that consultative facilities are utilized not just to arrange to carry out treatment programs but, as a more vital intermediary step, to assay the treatment, the strategy, and the course to be followed. This is the step in the treat-

ment program which I believe can best be followed out by good liaison, cooperation, and coordination between the psychiatrist and general practitioner. Utilizing this step is perhaps the best means of tailoring the therapy to the patient's need. It seems much sounder to take careful aim with a rifle than to point a shotgun in the air, pull the trigger, and hope to hit something.

AS THERAPIST

The therapeutic range is broad. Some effort has to be made to define which problems are likely to require long term, more intensive psychotherapy; which may lend themselves to solution by short term treatment; and which should be handled by the psychiatrist, which by the general practitioner and psychiatrist, and which by the general practitioner alone. Of course, it is not always possible to predict the wisest course with certainty, but by careful interviewing techniques and sound reflection it is possible to do so with good regularity.

Patients are not always aware of the sources of anxiety toward which their symptoms constitute a reaction or a defense. If the problem can be handled in a practical, common-sense fashion, then by all means it should be so handled, and the general practitioner should be equipped to do this. If, however, the personality reactions are more complex, then the weight should be shifted onto the psychiatrist, who should be equipped and should have the opportunity to carry the load. It is just as much of a mistake to treat a simple problem by long term therapy as to treat a complicated one by oversimplified short term treatment. It is not an either/or problem. The need must be defined and then every effort made to see that the treatment of choice is carried out by the best qualified person.

As a therapist the psychiatrist is expected to (1) size up the patient and his interpersonal reaction; (2) get the patient into treatment by dealing with resistance, hostilities, and anxieties of both the patient and relatives or friends; and (3) carry out appropriate therapy for various problems. If the doctor says what he means, means what he says, and carries it out with a firm yet kindly, understanding attitude, the patient is apt to hear and do something about what has been said. Psychiatric problems are then likely to fall into one of four broad categories: those that require (1) psychiatric hospitalization; (2) long range, intensive psychotherapy, (3) short term psychotherapy, or (4) brief treatment.

The first group comprises those rather complex, usually psychotic personality disorders which, for facilitated treatment as well as the patient's and his community's welfare, require the neutral, supportive environment of a hospital. The second group includes those complicated, usually neurotic or subpsychotic reactions occurring in persons well enough organized to carry out in acceptable fashion their daily life's activities. The third group takes in those relatively well organized persons who, nevertheless, have been more or less habitually struggling with a personal problem or conflict, the source of which they pretty well know but are not adequately emotionally equipped to deal with on their own. The fourth group is made up of those well organized persons who, momentarily and usually in response to some acute, primarily situationally engendered stress, get off the track and feel that, while they might handle the problem alone or with a general practitioner's help, they could benefit from an opportunity in one, two, or perhaps three sessions to share things with another impartial, mature person with more training and experience in understanding human behavior and personal functioning.

AS ADVISER

Finally, as an adviser the psychiatrist may be able to meet relatively transient but strategically important problems that confront the general practitioner, who may know what he wants to do about a particular psychiatric problem but be a little insecure and want some confirmation. At all levels of training and experience, much has to be learned rather than taught, but this sharing professionally, even though it be little more than an opportunity to talk things over with a colleague, may by its very availability be a potent stabilizing influence.

Frequently the general practitioner needs advice rather than help, but when he does so he is apt to desire the one as much as the other. He might, for instance, need some reassurance in continuing his role of friendly medical counsel by supporting a patient's defenses and rationalizations rather than more ambitiously plunging in only to put more heat than light on the subject, or to nudge the patient in the direction of attempting to solve the problem by making it worse. I would not have anyone believe, though, that general practitioners are more apt to get into difficulty than not, for certainly, in an informal way and often without fully realizing just how they do such significant things, general practitioners, through their intuitive skill, real practical know-how, and closeness to the patient's life scene, accomplish a great deal.

Perhaps it is appropriate to tell a story that appeared some time ago in the *New Yorker.* A young surgeon and general practitioner operated upon an elderly woman. On the third postoperative day the nurse told the patient to get up and that it would be all right for her to walk down the hall. The patient protested but the nurse insisted, saying, "I'm sorry, Mrs. Jones, but Dr. S. expects this of all his patients

and I'm only carrying out his orders." The patient obliged, followed her instructions, and gradually increased her activities. At the end of two weeks the patient was up and about all day long and seemed fine. Her son called the doctor aside and said, "I want to congratulate you on having performed a miracle." To which the doctor replied, "Not at all, it's just routine." "I know, Doctor," said the son, "it's just routine to you, but I don't agree. You see, Mother hasn't been out of bed for seventeen years."

As a parting thought, I urge the general practitioner, if necessary, to shift his attitude, modernize his point of view, overcome personal bias, and utilize early psychiatric consultation often, or run the risk of using obsolete methods.

ABSTRACT OF DISCUSSION

DR. WILLIAM FRANK COLE. Houston: I believe that family doctors must recognize that it is not the isolated well-marked psychoneurosis that should be their prime consideration; it is the fact that every patient who enters their offices is composed of both mind and body and that no organic disease ever walks in and leaves his mind at home. People are confronted on every hand by feelings of fear, insecurity, guilt, and depression, and the fact that the patient is sick makes all his emotional barriers more significant.

The responsibility of a family doctor does not end with recognizing and treating the obvious physical illness that confronts him; he must have the time to listen and the patience to serve as a friendly consultant in the many problems of our complex life. The sense of human personal understanding by the physician may be of crucial importance in restoring a measure of self confidence to his patient.

If we physicians can understand that the thoughts that crowd into a patient's mind may be colored deep "blue" while our mind is resting in a peaceful shade of bright "yellow" and that any word the patient utters may not appear "blue" to us at all but will take on a beautiful "green" because of the implication our "yellow" mind may attach to it, we will begin to see the difficulties we meet in making a rapid snap diagnosis based on what the patient wants to tell us colored by what we want to hear him say.

As Dr. Ballich has pointed out, it is the duty of the psychiatrist to impart some of his specialized training and knowledge to the family doctor, and it likewise is the duty of the family doctor to avail himself of all the means at his disposal to offer the patient a balanced formula to treat his emotional illness as well as his physical illness. He has said that all patients want to feel better but fewer are interested in doing anything about it. I say that many patients consult their family doctor on some physical pretext, seeking an opportunity to relieve themselves from some emotional problem. We must be trained to recognize these facts and to help those who seek help.

It is said in business, "The difference between the deepest depression and the greatest prosperity depends on success in the art of selling." I would rephrase that to read, "The difference between the deepest depression and the greatest prosperity depends on success in the art of *living.*"

We are all physicians no matter what specialty is practiced, and we are all concerned with only one problem: to make the patient well. Before the treatment can be prescribed, the illness must be correctly and fully diagnosed—this requires patience. Patience has been aptly defined as "that enviable ability to idle your motor when you actually feel like stripping your gears." We owe it to ourselves and our patients to give enough listening to come to the right decision as to how much of their discomfort is due to physical ailments and how much to their psychic ailments.

It is usually possible to give relief to most psychosomatic illnesses, but the cases that should be recognized and, in my opinion, referred to the psychiatrist consist of those that show definite psychotic symptoms, suicidal symptoms, dangerous tendencies, well-marked psychoneuroses, and certainly those that show no response to treatment.

American Public Health Meeting

The eighty-first annual meeting of the American Public Health Association and forty related organizations will be held in New York November 9-13, with "Meeting the Health Needs of the Community" as the theme. Discussions will be centered around news of the latest developments aimed at preventing disease and promoting personal and public health. More than 5,000 public health workers are expected to attend.

Progress reports are to be made in the use of gamma globulin for poliomyelitis prevention, mass vaccination against influenza, fluoridation of food and water supplies, new methods of tuberculosis treatment and care, and integration of mental health in public health departments. Sessions will be devoted to industrial hygiene and sanitation, school health programs, nutrition and dietary developments, control of animal disease, maternal and child health, accident prevention, home nursing, laboratory and engineering developments, and work with handicapped children.

Presentation will be made of the Sedgwick Memorial Medal for distinguished service in public health and the Lasker Awards for 1953 for outstanding contributions in medical research and public health administration.

AGE LEVEL IN POLIOMYELITIS RISES

More older children and young adults are victims of poliomyelitis now than in the past, according to a Metropolitan Life Insurance Company report on the basis of experience among the company's industrial policyholders. The period of maximum mortality among policyholders formerly was at the preschool ages. Statisticians regard the shift toward a higher age at attack as an adverse development because the proportion of severe cases is greater and the case fatality is higher at these ages.

In general, the situation with regard to poliomyelitis is viewed as encouraging, the statisticians observe. "Despite the rise in the death rate from poliomyelitis, the level of the rate is not at all high. The vast majority of persons acquire natural immunity to the disease in childhood. Moreover, parents and the public generally are increasingly alert to the early signs of the disease, and the prompt attention received by suspected cases together with the greatly augmented facilities for treatment contribute to its better control. Gamma globulin, providing temporary protection or reducing the severity of the disease, is being used to the limit of its availability, and recent research gives hope for the eventual development of means of permanent immunization."

NEWS

COMING MEETINGS AND CLINICS

Texas Medical Association, San Antonio, May 3-5, 1954. Dr. George Turner, El Paso, Pres.; Mr. N. C. Forrester, 1801 Lamar Blvd., Austin, Executive Secy.

American Medical Association, St. Louis, Dec. 1-4, 1953. Dr. Edward J. McCormick, Toledo, Ohio, Pres.; Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secy.

NATIONAL AND REGIONAL

American Academy of Allergy, Houston, Feb. 1-3, 1954. Dr. Ben Z. Rappaport, Chicago, Pres.; Dr. Alan G. Cazort, 1425 West 7th St., Little Rock, Secy.

American Academy of Dermatology and Syphilology, Chicago, Dec. 5-10, 1953. Dr. Michael H. Ebert, Chicago, Pres.; Dr. John E. Rauschkolb, 25 Prospect Ave., N W., Cleveland 15, Secy.

American Academy of General Practice. Dr. R. B. Robins, Camden, Ark., Pres.; Mr. Mac F. Cahal, 406 W. 34th St., Kansas City 2, Executive Secy.

American Academy of Obstetrics and Gynecology, Cincinnati, Dec. 14-16, 1953. Dr. Robert A. Kimbrough, Jr., Philadelphia, Pres.; Dr. C. Paul Hodgkinson, Detroit, Secy.

American Academy of Ophthalmology and Otolaryngology, Chicago, Oct. 12-16, 1953. Dr. Frederick C. Cordes, San Francisco, Pres.; Dr. W. L. Benedict, 100 First Ave. Bldg., Rochester, Minn., Secy.

American Academy of Pediatrics, Miami, Oct. 6-9, 1953. Dr. Phillip Barba, Philadelphia, Pres.; Dr. E. H. Christopherson, 610 Church St., Evanston, Ill., Secy.

American Association for Thoracic Surgery, Montreal, Canada, May 3-5, 1954. Dr. Emile F. Holman, San Francisco, Pres.; Dr. Paul C. Samson, 2938 McClure St., Oakland 9, Calif., Secy.

American Association of Genito-Urinary Surgeons, Shawnee-on Delaware, Pa., May 26-28, 1954. Dr. Vincent J. O'Conor, Chicago, Pres.; Dr. Norris J. Heckel, 122 S. Michigan Ave., Chicago 3, Secy.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Hot Springs, Va., Sept. 10-12, 1953. Dr. Nicholson J. Eastman, Baltimore, Pres.; Dr. William F. Mengert, 2211 Oak Lawn Ave., Dallas, Secy.

American Cancer Society. Dr. Guy Aud, Louisville, Ky., Pres.; Mr. M. R. Runyon, 47 Beaver St., New York, Executive Vice-Pres.

American College of Allergists, Miami Beach, April 5-10, 1954. Dr. M. Murray Peshkin, New York, Pres.; Dr. Fred W. Wittich, 423 La Salle Medical Bldg., Minneapolis 2, Secy.

American College of Chest Physicians, San Francisco, June 17-20, 1954. Dr. Alvis E. Greer, Houston, Pres.; Mr. Murray Kornfeld, 112 E. Chestnut St., Chicago 11, Executive Secy.

American College of Physicians, Chicago, April 5-9, 1954. Dr. Leroy H. Sloan, Chicago, Pres.; Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Secy.

American College of Radiology, Chicago, February, 1954. Dr. John D. Camp, Los Angeles, Pres.; Mr. W. C. Stronach, 20 N. Wacker Drive, Chicago 6, Executive Secy.

American College of Surgeons, Chicago, Oct. 5-9, 1953. Dr. Harold L. Foss, Danville, Pa., Pres.; Dr. Michael L. Mason, 40 E. Erie St., Chicago 11, Secy.

American Congress of Physical Medicine and Rehabilitation, Chicago, Aug. 31-Sept. 4, 1953. Dr. Walter M. Solomon, Cleveland, Pres.; Dr. Frances Baker, 1 Tilton Ave., San Mateo, Calif., Secy.

American Dermatological Association, White Sulphur Springs, W. Va., April 13-17, 1954. Dr. Louis A. Brunsting, Rochester, Minn., Pres.; Dr. J. Lamar Callaway, Duke Hospital, Durham, N. C., Secy.

American Gastro-Enterological Association, San Francisco, June 18-19, 1954. Dr. J. M. Ruffin, Durham, N. C., Pres.; Dr. H. Marvin Pollard, 1313 E. Ann St., Ann Arbor, Mich., Secy.

American Gynecological Society, Hot Springs, Va., May 20-22, 1954. Dr. Richard W. TeLinde, Baltimore, Pres.; Dr. John I. Brewer, 104 S. Michigan Ave., Chicago, Secy.

American Hospital Association, San Francisco, Aug. 31-Sept. 3, 1953. Dr. Edwin L. Crosby, Chicago, Pres.; Mr. George P. Bugbee, 18 E. Division St., Chicago, Executive Secy.

American Laryngological, Rhinological, and Otological Society, Boston, May 25-27, 1954. Dr. LeRoy A. Schall, Boston, Pres.; Dr. C. S. Nash, 277 Alexander St., Rochester 7, N. Y., Secy.

American Neurological Association. Dr. Roland P. Mackay, Chicago, Pres.; Dr. H. Houston Merritt, 710 W. 168th St., New York 32, Secy.

American Ophthalmological Society. Dr. William L. Benedict, Rochester, Minn., Pres.; Dr. M. C. Wheeler, 30 W. 59th St., New York 19, Secy.

American Orthopedic Association. Dr. James Dickson, Cleveland, Pres.; Dr. George O. Eaton, 4 E. Madison St., Baltimore 2, Secy.

American Pediatric Society, Buck Hill Falls, Pa., May 3-5, 1954. Dr. Rustin McIntosh, New York, Pres.; Dr. Aims McGuinness, 237 Medical Laboratory, University of Pennsylvania, Philadelphia 46, Secy.

American Proctologic Society. Dr. Newton D. Smith, Rochester, Minn., Pres.; Dr. Stuart T. Ross, 131 Fulton Ave., Hempstead, N. Y., Secy.

American Psychiatric Association, St. Louis, May 3-7, 1954. Dr. Kenneth E. Appel, Philadelphia, Pres.; Dr. R. Finley Gayle, 6300 Three Chopt Rd., Richmond 21, Va., Secy.

American Public Health Association, New York, Nov. 9-13, 1953. Dr. Wilton L. Halverson, San Francisco, Pres.; Dr. R. W. Atwater, 1790 Broadway, New York 19, Executive Secy.

American Society of Anesthesiologists, Seattle, Oct. 6-9, 1953. Dr. Ralph T. Knight, Minneapolis, Pres.; Dr. J. E. Remlinger, Jr., 188 W. Randolph St., Chicago, Secy.

American Society of Clinical Pathologists, Chicago, October, 1953. Dr. Henry F. Hunt, Danville, Pa., Pres.; Dr. Clyde G. Culbertson, Indiana University School of Medicine, Indianapolis, Secy.

American Surgical Association, Cleveland, April, 1954. Dr. Howard C. Naffziger, San Francisco, Pres.; Dr. R. Kennedy Gilchrist, 59 East Madison St., Chicago, Secy.

American Urological Association, New York, May 31-June 3, 1954. Dr. J. A. Campbell Colston, Baltimore, Md., Pres.; Dr. C. H. DeT. Shivers, 121 S. Illinois Ave., Atlantic City, N. J., Secy.

Association of American Physicians and Surgeons, Chicago, Oct. 8-10, 1953. Dr. Charles L. Farrell, Pawtucket, R. I., Pres.; Mr. Harry E. Northam, 360 N. Michigan Ave., Chicago 1, Executive Secy.

International College of Surgeons, U. S. Chapter, New York, Sept. 14-18, 1953. Dr. William R. Lovelace, Albuquerque, N. M., Pres.; Dr. Karl Meyer, 1516 Lake Shore Drive, Chicago, Secy.

National Tuberculosis Association, Atlantic City, N. J., May 17-21, 1954. Mr. Mark H. Harrington, Denver, Pres.; Mr. Kemp D. Battle, 1790 Broadway, New York 19, Secy.

Radiological Society of North America, Chicago, Dec. 13-18, 1953. Dr. Ira H. Lockwood, Kansas City, Mo., Pres.; Dr. D. S. Childs, 713 E. Genesee, Syracuse 2, N. Y., Secy.

Southern Medical Association, Atlanta, Ga., Oct. 26-29, 1953. Dr. Walter C. Jones, Miami, Pres.; Mr. C. P. Loranz, 1020 Empire Bldg., Birmingham 3, Ala., Secy.

Southern Psychiatric Association, Biloxi, Miss., Oct. 4-6, 1953. Dr. R. Burke Suitt, Durham, N. C., Pres.; Dr. Joseph L. Knapp, 210 N. Westmoreland, Dallas, Secy.

Southern Surgical Association, Hot Springs, Va., Dec. 8-10, 1953. Dr. I. A. Bigger, Richmond, Va., Pres.; Dr. John C. Burch, 2112 West End Ave., Nashville 5, Tenn., Secy.

Southwest Allergy Forum. Dr. Orval R. Withers, Kansas City, Mo., Pres.; Dr. Frederic Speer, 2601 Parallel Ave., Kansas City 4, Mo., Secy.

Southwest Regional Cancer Conference, Fort Worth, Sept. 23-24, 1953. Secy., 209 Medical Arts Bldg., Fort Worth.

Southwestern Medical Association, Tucson, Oct. 29-31, 1953. Dr. Wesley O. Connor, Jr., Albuquerque, N. M., Pres.; Dr. Celso Stapp, 800 Montana, El Paso, Secy.

Southwestern Surgical Congress, Salt Lake City, Utah, Sept. 21-23, 1953. Dr. Louis P. Good, Texarkana, Ark., Pres.; Dr. C. R. Rountree, 1227 Classen, Oklahoma City 3, Secy.

Tri-State Medical Assembly. Dr. Frank G. Thibault, El Dorado, Ark., Pres.; Dr. Albert M. Hand, Le Bonheur Children's Hospital, Memphis 3, Tenn., Secy.

United States-Mexico Border Public Health Association, Albuquerque, N. M., April, 1954. Mr. Richard F. Poston, Dallas, Pres.; Dr. Sidney B. Clark, 314 U. S. Court House, El Paso, Secy.

STATE

Private Clinics and Hospitals Association of Texas, Austin, Dec. 5-6, 1953. Dr. S. D. Coleman, Navasota, Pres.; Dr. Neil D. Buie, Marlin, Secy.

Texas Academy of General Practice, Dallas, Sept. 21-23, 1953. Dr. C. U. Callan, Rotan, Pres.; Dr. Woodson W. Harris, 1410 Nickerson, Austin, Secy.

Texas Academy of Internal Medicine, Houston, December, 1953. Dr. Hatch W. Cummings, Jr., Houston, Pres.; Dr. George M. Jones, 1314 Medical Arts Bldg., Dallas, Secy. Meetings restricted to members.

Texas Air-Medics Association, San Antonio, May, 1954. Dr. George L. Gallaher, Harlingen, Pres.; Dr. J. S. Minnett, 2512 Welborn, Dallas, Secy.

Texas Association of Blood Banks, Fort Worth, Dec. 4-5, 1953. Dr. W. N. Powell. Temple, Pres.; Miss Majorie Saunders, 3500 Gaston Ave., Dallas, Secy.

Texas Association of Obstetricians and Gynecologists, Waco, 1954. Dr. D. D. Wall, San Angelo, Pres.; Dr. Cary Hiett, 815 Fifth Ave., Fort Worth, Secy.

Texas Chapter, American College of Chest Physicians, San Antonio, May 2, 1954. Dr. Henry H. Hoskins, San Antonio, Pres.; Dr. Walter C. Brown, 1733 S. Brownlee Blvd., Corpus Christi, Secy.

Texas Club of Internists. Dr. Joseph F. McVeigh, Fort Worth, Pres.; Dr. Charles Darnall, Capital National Bank Bldg., Austin, Secy.

Texas Dermatological Society, San Antonio, May 2, 1954. Dr. Maurice Barnes, Waco, Pres.; Dr. Thomas L. Shields, 1216 Pennsylvania Ave., Fort Worth, Secy.

Texas Diabetes Association, San Antonio, May 2, 1954. Dr. Raymond L. Gregory, Galveston, Pres.; Dr. Edmond K. Doak, 501 Hermann Professional Bldg., Houston, Secy.

Texas Division, American Cancer Society. Mr. Travis Wallace, Dallas, Pres.; Mr. J. Louis Neff, 1609 Colorado, Austin, Executive Director.

Texas Heart Association, San Antonio, May 3, 1954. Dr. Joseph McVeigh, Fort Worth, Pres.; Miss Roberta Miller, 412 Fidelity Union Life Bldg., 1511 Bryan St., Dallas, Executive Secy.

Texas Hospital Association, Houston, May 18-20, 1954. Mr. W. U. Paul, El Paso, Pres.; Mrs. Ruth Barnhart, 2210 Main St., Dallas, Secy.

Texas Neuropsychiatric Association, San Antonio, May 2, 1954. Dr. James Blair, San Antonio, Pres.; Dr. John L. Otto, John Sealy Hospital, Galveston, Secy.

Texas Orthopedic Association, San Antonio, May 3, 1954. Dr. Edward T. Smith, Houston, Pres.; Dr. Margaret Watkins, 3629 Fairmount St., Dallas, Secy.

Texas Pediatric Society, Corpus Christi, Oct. 2-3, 1953. Dr. J. A. Bybee, Beaumont, Pres.; Dr. M. C. Carlisle, 1410 Austin Ave., Waco, Secy.

Texas Public Health Association, Galveston, Feb. 14-17, 1954. Dr. Roy G. Reed, La Marque, Pres.; Mr. Earle W. Sudderth, Dallas County Health Department, Court House, Dallas, Executive Secy.

Texas Radiological Society, Dallas, Jan. 29-30, 1954. Dr. J. E. Miller, Dallas, Pres.; Dr. R. P. O'Bannon, 650 Fifth Ave., Fort Worth, Secy.

Texas Railway and Traumatic Surgical Association, San Antonio, May 3, 1954. Dr. William E. Crump, Wichita Falls, Pres.; Dr. W. D. Marrs, 306 Broadway, Fort Worth, Secy.

Texas Rheumatism Association, Houston, Dec. 4, 1953. Dr. J. C. Crager, Beaumont, Pres.; Dr. Charles H. Cornwell, Marlin, Secy.

Texas Society for Mental Health, Waco, March 4-6, 1954. Mrs. Frank Schoonover, Fort Worth, Pres.; Mrs. Elizabeth F. Gardner, 2504 Jarratt Ave., Austin 21, Executive Secy.

Texas Society of Anesthesiologists, San Antonio, May 2, 1954. Dr. James B. Robinett, Jr., Houston, Pres.; Dr. C. R. Allen, John Sealy Hospital, Galveston, Secy.

Texas Society of Gastroenterologists and Proctologists, San Antonio, May, 1954. Dr. Cecil O. Patterson, Dallas, Pres.; Dr. W. T. Arnold, 1402 Hermann Prof. Bldg., Houston, Secy.

Texas Society of Ophthalmology and Otolaryngology, Fort Worth, Dec. 4-5, 1953. Dr. Dan Brannin, Dallas, Pres.; Dr. Lyle Hooker, 627 Esperson Bldg., Houston, Secy.

Texas Society of Pathologists, Galveston, Jan. 31, 1954. Dr. A. O. Severance, San Antonio, Pres.; Dr. Lloyd R. Hershberger, Shannon Memorial Hospital, San Angelo, Secy.

Texas Surgical Society, Dallas, Oct. 5-6, 1953. Dr. George W. Waldron, Houston, Pres.; Dr. Albert W. Hartman, 414 Navarro St., San Antonio 5, Secy.

Texas Tuberculosis Association, Dallas, April 9-10, 1954. Dr. R. G. McCorkle, San Antonio, Pres.; Miss Pansy Nichols, 208 E. Ninth, Austin, Executive Secy.

Texas Urological Society. Dr. R. E. Cone, Galveston, Pres.; Dr. Ray M. Morgan, Jr., Hermann Hospital, Houston, Secy.

DISTRICT

First District Society, Pecos, February, 1954. Dr. John W. O'Donnell, Alpine, Pres.; Dr. H. D. Garrett, First National Bldg., El Paso, Secy.

Second District Society, Sweetwater. Dr. T. D. Young, Sweetwater, Pres.; Dr. Francis Hood, Sweetwater, Secy.

Third District Society, Amarillo, April 13, 1954. Dr. Robert A. Neblett, Canyon, Pres.; Dr. James T. Hall, 1626 Fifteenth St., Lubbock, Secy.

Fourth District Society, Brownwood, Oct. 8, 1953. Dr. Lloyd R. Hershberger, San Angelo, Pres.; Dr. Paul M. Wheelis, Brownwood, Secy.

Fifth and Sixth Districts Society. Dr. Y. C. Smith, Sr., Corpus Christi, Pres.; Dr. Robert J. Sigler, 1126 Third Street, Corpus Christi, Secy.

Seventh District Society. Dr. Benjamin Clary Bates, Austin, Pres.; Dr. William McLean, 4618 Burnet Road, Austin, Secy.

Eighth District Society, Wharton, Oct. 8, 1953. Dr. Andrew S. Tomb, Victoria, Pres.; Dr. George E. Glover, Jr., Victoria, Secy.

Ninth District Society, Brenham, March 25, 1954. Dr. George D. Bruce, Baytown, Pres.; Dr. Lyman C. Blair, 1212 Rothwell, Houston, Secy.

Tenth District Medical Society. Dr. Edmund D. Jones, Beaumont, Pres.; Dr. O. W. Harris, Jr., Liberty, Secy.

Eleventh District Society. Dr. Roscoe Moore, Mineola, Pres.; Dr. Marlin T. Braswell, Henderson, Secy.

Twelfth District Society, Waco, January, 1954. Dr. Howard Dudgeon, Jr., Waco, Pres.; Dr. Walter B. King, Jr., Waco, Secy.

Thirteenth District Society, Fort Worth, 1954. Dr. William E. Crump, Wichita Falls, Pres.; Dr. Robert D. Moreton, 815 Medical Arts Bldg., Fort Worth, Secy.

Fourteenth District Society, Denton, 1954. Dr. J. W. Atchison, Gainesville, Pres.; Dr. L. W. Johnston, 502 W. College St., Terrell, Secy.

Fifteenth District Society, Longview, April 20, 1954. Dr. L. E. Rutledge, Daingerfield, Pres.; Dr. George Tate, Longview, Secy.

CLINICS

Dallas Southern Clinical Society, Dallas, March 15-18, 1954. Miss Helga Boyd, Medical Arts Bldg., Dallas 1, Executive Secy.

Central Texas Spring Clinic. Dr. Walter B. King, 2320 Columbus Ave., Waco, Secy.

International Medical Assembly of Southwest Texas. Dr. John M. Smith, Jr., 205 Camden St., San Antonio, Secy.

New Orleans Graduate Medical Assembly, New Orleans, March 8-11, 1954. Dr. Maurice E. St. Martin, Room 103, 1430 Tulane Ave., New Orleans 12, Secy.

North Texas-Southern Oklahoma Fall Clinical Conference, Wichita Falls, Sept. 16, 1953. Dr. C. H. Wilson, Wichita Falls, Chairman.

Oklahoma City Clinical Society Conference, Oklahoma City, Oct. 26-29, 1953. Miss Alma F. O'Donnell, 512 Medical Arts Bldg., Oklahoma City 2, Executive Secy.

Postgraduate Medical Assembly of South Texas. Dr. C. A. Dwyer, 229 Medical Arts Bldg., Houston, Secy.

State Tumor Clinic. Dr. Bailey R. Collins, 925½ Scott Street, Wichita Falls, Director.

BOARD EXAMINATIONS

Texas State Board of Medical Examiners, Fort Worth, Nov. 12-14, 1953. Dr. M. H. Crabb, 1714 Medical Arts Bldg., Fort Worth, Secy.

TEXAS ACADEMY OF GENERAL PRACTICE

The State Fair Auditorium in Dallas will be the scene September 21 through 23 of the fourth annual scientific assembly of the Texas Academy of General Practice.

Ten out-of-state guest speakers will take part in the three-day scientific program. Papers on cardiology, endocrinology, medicine, psychiatry, gynecology, ophthalmology, orthopedics, surgery, and urology will be given. The speakers and their topics are:

FRANCIS L. CHAMBERLAIN, San Francisco: "Specific Treatment of Hypertension" and "Recent Advances in Electrocardiography of Importance in General Practice."

HENRY H. TURNER, Oklahoma City: "Endocrine Disorders of Childhood" and "Psychomatics and Pseudo-Endocrinopathies."

EDGAR HULL, New Orleans: "Hints in Recognition of Certain Endocrine Diseases" and "Asymptomatic Organic Disease."

HENRY W. BROSIN, Pittsburgh: "Interviewing Techniques" and "Depressive Reactions in General Practice."

SOMERS H. STURGIS, Boston: "Problems of Sterility" and "Diagnosis and Treatment of Amenorrhea."

BENJAMIN WOLPAW, Cleveland: "Retinal Changes in Hypertensive Vascular Disease" and "External Diseases of the Eye as Seen by the General Practitioner."

MARCUS J. STEWART, Memphis: "Diagnosis and Treatment of Minor Foot Problems" and "Differential Diagnosis of Low Back Pain."

ALTON OCHSNER, New Orleans: "Diagnosis of Cancer of the Lung" and "Diagnosis and Treatment of the Post-Phlebitic Extremity."

PHILIP THOREK, Chicago: "Only an Appendix" and "Diagnosis and Treatment of Breast Lesions."

HENRY M. WEYRAUCH, San Francisco: "Pitfalls in Urologic Diagnosis" and "Office Treatment of Common Urologic Conditions."

Advance registrations may be mailed to Dr. M. S. Seely, Medical Arts Building, Dallas. The fee is $20. Hotel reservations should be made personally with the hotel of choice. Nonmembers are invited to attend, and entertainment for the physicians' wives has been arranged.

NATUROPATHIC ACT HELD UNCONSTITUTIONAL

The Attorney General of Texas, John Ben Shepperd, has held the act authorizing the practice of naturopathy to be unconstitutional on grounds it gives preference to one segment of the healing arts. A letter of June 29, prepared by Assistant Attorney General Elbert M. Morrow and addressed to Austin F. Anderson, criminal district attorney of Bexar County, outlined the opinion.

The text of the letter follows:

Your letter presents the following question to this office for consideration:

1. "Is Article 4590d, V.C.S., unconstitutional as being an attempt by the Legislature to give preference to a particular school of medicine in violation of Texas Constitution Article XVI § 31 in that it enables such school to diagnose and treat human ills without equal standards of education and qualifications?"

2. "If the first question is answered in the negative, then does Article 4590d, V.C.S. conflict irreconcilably with and by implication repeal, Article 4510 V.C.S., in that the definition of naturopathy is in fact encompassed by the definition of the practice of medicine?"

Section 31 of Article XVI of the Constitution of Texas reads as follows:

"The Legislature may pass laws prescribing the qualifications of practitioners of medicine in this State, and to punish persons for mal-practice, but no preference shall ever be given by law to any schools of medicine."

Article 739, V.P.C., reads in part as follows:

"It shall be unlawful for any one to practice medicine, in any of its branches, upon human beings within the limits of this State who has not registered in the District Clerk's office of every County in which he may reside, . . ."

The case of *Dowdell v. McBride*, 92 Tex. 239, 47 S. W. 524 (1898), discusses the application of the constitutional provision in this language:

"The first portion of the constitutional provision above quoted confers upon the legislature general power to pass laws (1) prescribing the qualifications of practitioners and (2) to punish persons for malpractice. Continuing the same sentence, the latter part of the provision subtracts from such otherwise general power, the word 'but' being used in the sense of 'except,' *by prohibiting the legislature in such laws from inserting any provision making a distinction in such qualifications or punishment on account of the 'school of medicine'* to which any of such 'practitioners' or 'persons' may happen to belong. The first portion dealing solely with 'qualifications of practitioners' and 'punishment,' and there being nothing in the context to indicate that the latter portion was intended to embrace any wider range of subjects, we must give it the effect, indicated by its situation and close connection with what precedes, of being merely a limitation upon the previous general power of prescribing 'qualifications of practitioners' and 'punishments.' . . ." (Emphasis Supplied)

Pursuant to this constitutional provision, the Legislature enacted the Medical Practice Act (Chapter 123, Acts 30th Leg., 1907). What is now Article 741 of the Penal Code was a part of that legislation (Section 13) and reads as follows:

"Any person shall be regarded as practicing medicine within the meaning of this Chapter: (1) who shall publicly profess to be a physician or surgeon and who shall diagnose, treat, or offer to treat, any disease or disorder, mental or physical, or any physical deformity or injury, by any system or method, or to effect cures thereof; (2) who shall diagnose, treat, or offer to treat, any disease or disorder, mental or physical, or any physical deformity or injury by any system or method, or to effect cures thereof and charge therefor, directly or indirectly, money or other compensation; *provided, however, that the provisions of this Article shall be construed with and in view of Article 740, Penal Code of Texas, and Article 4504, Revised Civil Statutes of Texas, as contained in this Act.*" (Emphasis supplied indicates the only changes by the 1949 amendment—the addition of the proviso clause, and the 1953 amendment adding the word "diagnose." Art. 4510, V.C.S. is identical.)

This particular provision of the Medical Practice Act has been before the courts of this State on several occasions. Shortly after its enactment, its constitutionality was considered because of the contention that its enactment contravened the Due Process Clause of the Fourteenth Amendment to the United States Constitution. Justice Holmes settled that question for all time upon reasoning which is unimpeachable—the importance of public health and the preservation thereof gives the State a dominant interest which may be exercised as police power; there is no inherent individual right to practice medicine. *Collins v. State*, 223 U. S. 288 (1911), affirming *Ex Parte Collins*, 121 S. W. 501 (Tex. Crim. 1909); *Johnson v. State*, 267 S. W. 1057 (Tex. Crim. 1925).

Thus, by the definition of what constitutes the practice of medicine, two classes of practitioners amenable to the law are clearly defined. One class consists of those who publicly profess to be physicians and claim to effect cures, while the other class consists of those who treat or offer to treat any disease or to effect cures and charge for such services. It is very clear that the method or school of medicine followed by a practitioner of *either* class is wholly immaterial. *Teem v. State*, 183 S. W. 1144 (Tex. Crim. 1916); *Newman v. State*, 124 S. W. 956 (Tex. Crim. 1910).

The Medical Practice Act does not purport to regulate how any person shall treat a disease or disorder, but merely requires that a person demonstrate that he is well grounded in certain studies before he may practice medicine. *Lewis v. State*, 155 S. W. 523 (Tex. Crim. 1913).

If the person possesses the statutory qualifications and is awarded a certificate to practice medicine, he is free to adopt any system of medical practice he desires. The fact that the Medical Practice Act requires a broader education than normally required of some particular school can not be urged as a discrimination against such school of medicine. Irrespective of the school of medicine or system of practice followed by the practitioner of medicine in any of these systems, the general welfare of the people demands that the practitioner be able to readily detect the presence of disease. *Johnson v. State, supra.* As stated by Justice Holmes in the *Collins* case, *supra:*

". . . He like others, must begin by a diagnosis. It is no answer to say that in many instances the diagnosis is easy, —that a man knows it when he has a cold or a toothache. For a general practice of science is needed. An osteopath undertakes to be something more than a nurse or a masseur, and the difference rests precisely in a claim to greater science, which the state requires him to prove. The same considerations that justify including him justify excluding the lower grades from the law. Watson v. Maryland, 218 U. S. 173, 179-180, 54 L. Ed. 987, 990, 30 S. Ct. 644."

The very purpose of the Act is to prevent incompetent persons from holding themselves out as possessing the qualifications to treat the public. Thus, the courts have uniformly held that the mode or method used in treating the public is immaterial; the person prescribing the treatment must

have the qualifications set out in the Medical Practice Act. The laying on of hands and prayer constitutes the practice of medicine. *Singh v. State,* 146 S. W. 891 (Tex. Crim. 1912). A person practicing chiropractic and naturopathy was held to be practicing medicine. *Hawkins v. State,* 125 S. W. 2d 580 (Tex. Crim. 1939). Other cases involving chiropractors are: *Teem v. State, supra; Ex Parte Halsted, supra; Ehrke v. State,* 115 S. W. 2d 631 (Tex. Crim. 1938); *Maier v. State,* 235 S. W. 576 (Tex. Crim. 1921). But see the case of *Nicodeme v. Bailey,* 243 S. W. 2d 397 (Tex. Civ. App. 1951, error ref. n.r.e.), the only case mentioning the non-preference clause of the Constitution subsequent to the 1947 Chiropractic amendment to the Medical Practice Act. As to optometry prior to the Optometry Act, see *Baker v. State,* 240 S. W. 924 (Tex. Crim. 1922), and after the passage of that Act see *Ex Parte Halsted, supra.* As to osteopaths, *Ex Parte Collins* and *Collins v. State,* both *supra.* As to masseurs, *Dankworth v. State,* 136 S. W. 788 (Tex. Crim. 1911); *Milling v. State,* 150 S. W. 434 (Tex. Crim. 1912); *Hyroop v. State,* 179 S. W. 878 (Tex. Crim. 1915).

It must first be determined whether a naturopath, licensed under the provisions of the Naturopathic Act, Article 4590d, V.C.S., is engaged in the practice of medicine. The practice of naturopathy is defined in that Act as follows:

"For the purpose of this Act, naturopathy and natureopathy shall be construed as synonymous terms, and the practice of naturopathy or natureopathy, is hereby defined as that philosophy and system of the healing art embracing *prevention, diagnosis, and treatment of human ills and functions* by the use of several properties of air, light, heat, cold, water, manipulation with the use of such substances, nutritional as are naturally found in and required by the body, excluding drugs, Surgery, X-ray, and radium therapy, and the use of X-ray equipment.

"Nothing in this Act shall be construed to be authority for any naturopath, licensed hereunder, to practice medicine *as defined by the laws regulating the practice of medicine in this State,* Surgery, Dentistry, Osteopathy, Chiropractic, Christian Science, or any other treatment or system of treatment authorized for by law, nor shall the provisions of this Act in any way or manner apply to or affect the practice of Medicine, Surgery, Osteopathy, Christian Science, or any other treatment or system of treatment authorized and provided for by law for the prevention of human ills." (Emphasis supplied)

Thus, the positive feature provides that naturopathy is the philosophy and system of the healing art embracing the *prevention, diagnosis, and treatment of human ills* by certain means; and by the negative part is not to be construed as giving the naturopath the right to practice medicine.

It appears that the paragraphs of the Naturopathic definition conflict with each other. Article 741, V.P.C., by defining the practice of medicine, further confuses the problem for a naturopath licensed under this Act may treat human ills but (by the same section) if he treats these ills, he violates the law.

It may be contended that this construction is too restrictive, but the intent of the Legislature was to set naturopathy aside as an independent field of endeavor separate and distinct from the practice of medicine, and that any provisions of the Act leading to a contrary conclusion must be rejected. Thus, in prohibiting the naturopath from practicing medicine, the intention of the Legislature was to permit the naturopath to act only in the realms of his particular endeavor without the use of drugs, surgery, etc., usually imputed to a practitioner of medicine. This, in essence, was the contention in the *Halsted* case, *supra.* Thus the question occurs as to whether the Legislature has the authority to make such a distinction.

Before discussing that point, however, it should be noted that the cases previously cited definitely determine that the Medical Practice Act of 1907, as amended, makes no distinction between schools of medicine or methods of treatment, but merely requires that a practitioner pass an examination proving his qualifications. *Ashby v. Board of Medical Examiners,* 142 S. W. 2d, 371 (Tex. Civ. App. 1940, error ref.). It is also clear that the constitutional provision does not prohibit a legislative definition of what does and what does not constitute the practice of medicine. *Baker v. State, supra; Ex Parte Halsted, supra.*

It is clear that in order to practice naturopathy a person must treat diseases or disorders and attempt to effect a cure. This is the practice of medicine. Art. 741, V.P.C. The question recurs on the power of the Legislature to set aside the practice of naturopathy as a separate healing art.

In the *Halsted* case, *supra,* a writ of habeas corpus was sought to obtain the discharge from custody of W. B. Halsted who had been arrested upon charges of practicing chiropractic without a license. Other activities were engaged in by the defendant in "violation" of the statute. The court discussed the provisions of the Chiropractic Act in the light of the constitutional provision and upon the question of being definite and certain. If the provisions were certain, it would be in violation of the constitutional provision. If the law was uncertain, it would fall of its own weight. One of these conclusions was stated in the following language:

"Thus the legislature has carved out of the field of the healing art a single system for treating diseases and disorders, and has given it special treatment, limiting the use thereof to those only who qualify under the terms of this Act. That such legislation violates the non-preference clause of Art. 16, Section 31, of our State Constitution definitely appears."

The *Halsted* case, *supra,* distinguishes the practice of chiropractic from the practice of dentistry and optometry under the non-preference clause of the Constitution (Art. XVI, Section 31) as being the treatment of the whole human body rather than a segment. Art. 741, V.P.C. Such a distinction cannot be made in the case of naturopaths. The *Halsted* case is squarely in point and the following language used in that case substantiates the position taken here:

"... Assuming, then that under the Act before us, the Legislature has set up, recognized, and defined chiropractic as a system, means, and method for the treatment of diseases and disorders of the human body, and that practitioners thereof are authorized to treat by chiropractic, patients for diseases and disorders, it is evident that the Legislature has preferred such science and such practitioners over all others engaged in doing the same thing, that is, in treating the human body for diseases and disorders because the chiropractor is not required to have the same educational qualifications nor is he required, as a condition precedent to his right to treat patients, to pass a satisfactory examination upon the same subjects that are required of all others similarly situated."

The principles announced in that case, when applied to the question presented, conclusively demonstrate that the qualifications and educational requirements imposed by the Naturopathic Act are not identical nor even substantially the same as those of the Medical Practice Act. Contrast Article 4590d, Sections 3, 8, and 9, V.C.S., with Articles 4500, 4501, and 4503, V.C.S. Nor does the Naturopathic Act repeal or modify the Medical Practice Act. Article 4590d, Section 5, V.C.S.

The Basic Science Law, Chapter 95, Acts of the 51st Legislature, 1949, Article 4590c, V.C.S., does not disturb the conclusions herein expressed, for that law merely provides that before a person is permitted to take an examination for a license to practice the healing art, he must present to the State Board of Examiners in Basic Sciences a certificate of proficiency in certain enumerated studies. Article 4590c, V.C.S. (Sections 1 and 3). These provisions have been construed as additional requirements to those imposed by the Acts requiring the examination by the different schools of medicine. *Stroud v. Crow*, 136 S. W. 2d 1025 (Ark. Sup. 1940, app. dism. 311 U. S. 607 (1940); Att'y Gen. Op. V-988 (1950).

The Basic Science Law does not purport to set up standards for the practice of medicine. Section 1 of that Act reads as follows:

"*No person shall be permitted to take an examination for a license* to practice the healing art or any branch thereof, or be granted any such license, unless he has presented to the Board or officer empowered to issue such a license as the applicant seeks, a certificate of proficiency in anatomy, physiology, chemistry, bacteriology, pathology, and hygiene and public health, hereinafter referred to as the basic sciences, issued by the State Board of Examiners in the Basic Sciences." (Emphasis supplied)

The emergency clause contains an added reason for this construction. It reads in part as follows:

"Sec. 26. The importance to the public of the provisions of this Act *and the necessity for further safeguarding the granting of licenses to persons practicing the healing arts* contained in this Act,..." (Emphasis supplied)

Neither can it be contended that the Healing Arts Identification Act, chapter 154 Acts 52nd Legislature, 1951, Article 4590e, V.C.S., in any manner affects the problem presented here. That Act merely requires that a person who is licensed to practice the healing art identify the system he follows by the placing of proper identification after his name under certain circumstances. The caption clearly shows this to be the only purpose of the Act and Section 2 then specifically provides that the definition of "healing arts" is only for the purpose of that Act.

The three very able briefs submitted for consideration advance the position that the *Halsted* case is not determinative of the question presented. For the reasons stated above, that position can not be sustained.

It is a fundamental concept of our jurisprudence that the actions of the Legislature are entitled to every consideration reasonably upholding their constitutionality. Indulging every presumption possible still leaves us with the inescapable conclusion that the Legislature has preferred one school of medicine over another by the lessening of the qualifications and standards of education required of a naturopath. Thus, no matter how worthy this classification might be and no matter what beneficial results would be attained if the Act were upheld, the Constitution is controlling and this legislation does not conform.

The Naturopathic Act violates the provisions of Art. XVI, Sec. 31 of the Constitution of Texas since it gives a preference to one segment of the healing arts. To rule otherwise would require a holding that the Act is uncertain and indefinite in defining the practice of naturopathy and thus unconstitutional.

Your first question is answered affirmatively thereby rendering an answer to your second question unnecessary.

SUMMARY

The Naturopathic Act, Article 4590d, V.C.S. violates the provisions of Art. XVI, § 31 of the Constitution of Texas in that it gives a preference to one segment of the healing arts. To rule otherwise would require a holding that the Act is uncertain and indefinite and thus unconstitutional. *Ex Parte Halsted*, 182 S. W. 2d 479 (Tex. Crim. 1944).

Public Health Association Meets

More than 300 public health officials and workers from both Mexico and the United States attended the eleventh annual meeting of the United States-Mexico Border Public Health Association. The meeting was held jointly in El Paso and Ciudad Juarez, Mexico, on April 8, 9, and 10.

The program included papers on psittacosis, poliomyelitis, encephalitis, venereal disease control, tuberculosis, maternal and child health, and sanitation.

Dr. George W. Cox, state health officer of Texas, and Dr. Miguel E. Bustamante, secretary general of the Pan American Sanitary Bureau, were nominated as honorary members of the group.

New officers were named for the 1953-1954 term. They are Richard F. Poston, Dallas, president; Dr. Arturo Rico Gonzalez, Chihuahua, Chih., Mexico, president-elect; Dr. Carlos Hernandez, Aguirre, Cuidad Juarez, Chih., Mexico, vice-president; and Dr. Sidney B. Clark, El Paso, secretary. Albuquerque, N. Mex., was selected as the site for the 1954 meeting, which is to be held sometime next April.

SOUTHWESTERN MEDICAL SCHOOL

Dr. E. E. Muirhead, chairman of the Department of Pathology at Southwestern Medical School of the University of Texas in Dallas, addressed the Veterans Administration Hospital staff in Lebanon, Pa., in February and served as instructor at the Army Medical Department research and postgraduate school in Washington.

Jean Donald Wilson, student at Southwestern Medical School of the University of Texas, received honorable mention in the competition for the William Osler Medal of the American Association of the History of Medicine for his paper on "Mineral Wells: Hydrotherapy Center of the Old Southwest."

Dr. Don P. Morris, professor of psychiatry at Southwestern, became president of the Texas Council on Mental Health at the group's annual convention in Austin recently.

Fred M. Lange, Dallas Community Chest director and vice-president, will be honored August 23 in Dallas in recognition of his service to the community. A reception will be given by the boards of the Southwestern Medical Foundation, the Salvation Army, and the Community Chest. For three years Mr. Lange was vice-president and managing director of the Southwestern Medical Foundation, during which time plans were begun to join the Southwestern Medical School with the University of Texas. At present he serves the foundation's board of trustees as an adviser.

Dr. George Nelson Aagaard, dean and professor of medicine at Southwestern, was guest speaker at the annual membership meeting of the East Texas Hospital Foundation in January in Tyler.

Dr. Joe Buck Caldwell, Southwestern graduate, and Miss Betty Barker were married in February in Crowell. The couple resides in Dallas.

Southwest Regional Cancer Conference

The seventh annual Southwest Regional Cancer Conference is scheduled for September 23-24 in Fort Worth. A tumor clinic will be held the evening of September 23. The following speakers will be on the September 24 program: Dr. Alfred S. Frobese, surgeon, University of Pennsylvania, Philadelphia; Dr. L. Henry Garland, radiologist, Stanford University, San Francisco; and Dr. Mary S. Sherman, orthopedist, Ochsner Clinic, New Orleans.

San Angelo Clinical Meeting

The first annual San Angelo Clinical Meeting was held May 14 at the Shannon Hospital under the sponsorship of the Tom Green-Eight County Medical Society and the San Angelo Division of the University of Texas Postgraduate School of Medicine. Speakers and subjects discussed follow: Dr. J. Warner Duckett, associate professor of surgery at Southwestern Medical School of the University of Texas, Dallas, "Present Status of Cardiovascular Surgery" and "Some Problems of Abdominal Surgery in Infancy"; Dr. G. W. N. Eggers, professor of orthopedic surgery at the University of Texas Medical Branch, Galveston, "Fractures in Children" and "Fractures of the Ankle"; and Dr. Earl Sellers, Abilene, "Practical Considerations of Allergic Diseases in General Practice."

Dr. Gordon F. Madding, president of the Tom Green-Eight County Medical Society, gave the welcoming address. Dr. V. E. Schulze presided over the morning meeting and Dr. T. G. Coleman over the afternoon session. Dr. Jerome H. Smith was chairman; Dr. Lloyd Hershberger, co-chairman.

Approximately eighty physicians from San Angelo and surrounding areas attended.

Fall Postgraduate Courses

The University of Texas Postgraduate School of Medicine has announced the fall courses to be offered by the Houston and San Angelo Divisions.

Courses offered by the Houston Division follow:

Wet Surgery Clinics—ten weeks, Friday mornings, beginning September 25.

Diabetes—six weeks, Tuesday evenings, beginning September 15.

Acute Infectious Diseases—six weeks, Tuesday evenings, beginning November 10.

Cardiology and Electrocardiography—twelve weeks, Monday evenings, beginning September 28, to be given in Austin.

The San Angelo Division will have the following course:

Medical Conferences—each Sunday, beginning the latter part of September.

Announcement of courses to be given by the San Antonio, Temple, Corpus Christi, Tyler, and Lubbock Divisions has not been made, but programs are to be mailed to physicians in the respective areas during August and September. Groups of physicians who desire courses or programs during the spring term, which begins January 1, 1954, are asked to confer with the dean in Houston or the director of the division in their respective region.

Further information may be obtained from the dean, the University of Texas, Postgraduate School of Medicine, 1400 Outer Belt Drive, Houston 25.

POLIOMYELITIS CLINIC IN DALLAS

Members of the staffs of Southwestern Medical School, Parkland Hospital, and the Scottish Rite Hospital for Crippled Children conducted a course on poliomyelitis May 18-19 in Dallas. It included demonstrations and lectures on all phases of poliomyelitis.

The clinic was sponsored by Southwestern Medical School, Dallas Southern Clinical Society, University of Texas Postgraduate School of Medicine, Texas Medical Association, and Texas Academy of General Practice.

Texas Medical Examiners

The Texas State Senate confirmed the appointment by Governor Allan Shivers of the following members of the Texas State Board of Medical Examiners on May 19: Dr. L. H. Denman, Lufkin; Dr. R. H. Peterson, Wichita Falls; Dr. M. H. Crabb, Fort Worth; and Dr. Howard O. Smith, Marlin.

PERSONALS

Dr. James A. Bethea on June 1 became executive director of the State Board for Hospitals and Special Schools with offices in Austin. Previously he was dean of the University of Texas Postgraduate School of Medicine at San Antonio.

At the May 28-30 meeting of the American Ophthalmological Society in Hot Springs, Va., *Dr. Everett L. Goar,* Houston, was elected vice-president.

Dr. A. L. Thomas, Ennis, practicing physician for fifty years, was honored by the Ellis County Medical Society at a public reception July 4 in Ennis.

The Twentieth Century Club of Weatherford honored *Dr. W. M. Campbell* May 6 with a reception in Weatherford for his years of the practice of medicine.

Dr. Barton E. Park, Dallas, was named Oak Cliff's man of the month for June by the editors of the magazine *Oak Cliff,* an organ of the Oak Cliff Chamber of Commerce.

Dr. Raymond H. Abrams, Dallas, recently became certified as a diplomate of the American Board of Obstetrics and Gynecology.

A special program and an old-fashioned picnic basket lunch was held July 4 in Goree City Park in honor of *Dr. E. F. Heard* and *Dr. W. M. Taylor,* both of Goree.

Dr. Homer E. Prince, Houston, is now president-elect and will become president of the American College of Allergists next April when the group meets in Miami.

Dr. Ozro T. Woods, Dallas, was selected by the Texas Society for Mental Health to receive the $250 Hogg Foundation Award for 1953, an annual citation for outstanding service in the field of mental health, it was announced at the society's March meeting in Austin.

Dr. Joseph A. Hertell, formerly of Waco, was appointed assistant director of the American Red Cross blood program July 1. Previously he was director and administrator of the Central Texas Red Cross regional blood center.

Dr. C. M. Cash, Texas' General Practitioner of the Year, was honored by the San Benito Rotary Club and the Rotary Anns, at a dinner in San Benito May 21 and was presented with a hat.

Honorees for a dinner in Seagraves May 29 were *Dr. and Mrs. Cecil B. Knox, Jr.* and *Dr. and Mrs. Luther S. Key,* both couples of Seagraves. Each doctor received a gift.

Dr. M. E. Robberson, Wynnewood, Okla., the brother of *Dr. Jason H. Robberson,* Amarillo, died June 7 at Wynnewood following a stroke.

The mother of *Dr. Claude C. Cody, Jr.,* Houston, Mrs. Mattie Hughes Cody, died in Georgetown July 6.

Mrs. J. Tom Pickard, mother of *Dr. Luther J. Pickard* of Abilene, died May 13 at Weatherford.

Dr. Henry H. Shipp, Woodsboro, was named the outstanding conservation farmer in the Copano Soil Conservation District this year and was presented with a plaque in recognition of his work in soil and range improvement.

Miss Jacquelyn Storey Emerson and *Dr. Stanton J. Barron, Jr.,* Corsicana, were married in Dallas, July 25.

Dr. Howard Thomas Barkley, Jr., and Miss Barbara Ann Bedenkapp were married recently in Albany, N. Y. Dr. Barkley is the son of *Dr. Howard T. Barkley,* Houston. The couple is residing in Richmond, Va.

Pan American Medical Women's Alliance

The Pan American Medical Women's Alliance will hold its fourth congress September 24-October 1 in New York City. The morning scientific programs will be of general interest, and clinics will be offered in specialized fields. A social program also has been planned. Registration fee is $10.

Further information may be obtained from the registration chairman, Dr. Ina A. Marsh, 140 Linwood Avenue, Buffalo 9, N. Y.

INTERNATIONAL COLLEGE OF SURGEONS

The eighteenth annual congress of the United States and Canadian sections of the International College of Surgeons is to be held September 13-16 in New York, with the scientific program consisting of discussions on cancer, rehabilitation, cardiopulmonary diseases, thyroid surgery, intervertebral disk lesions, surgery of the stomach and intestines, diseases of the esophagus, and vascular surgery.

Dr. Richard Shryock, director of the Institute of the History of Medicine at Johns Hopkins University, Baltimore, will discuss the International Surgeons' Hall of Fame.

Industrial Health Conference

The Houston Chamber of Commerce is sponsoring the sixth Industrial Health Conference October 1-3 in Houston. Some of the general subjects include health problems in the petroleum industry, problems of heart in industry, waste disposal problems, the role of the industrial nurse in the industrial health program, and the future in industrial health.

Detailed information may be obtained from the Industrial Health Conference, Houston Chamber of Commerce, Houston.

PHYSICAL MEDICINE AND REHABILITATION SESSION

The American Congress of Physical Medicine and Rehabilitation will hold its thirty-first annual scientific and clinical session August 31-September 4 in Chicago. All sessions will be open to members in good standing of the American Medical Association.

Annual instruction seminars also will be held with lectures open to physicians as well as therapists who are registered with the American Registry of Physical Therapists or the American Occupational Therapy Association.

Further information is available from the executive offices, American Congress of Physical Medicine and Rehabilitation, 30 North Michigan Avenue, Chicago 2.

LIBRARY SECTION

BOOKS RECEIVED IN JULY

Courville, Cyril B.: *Commotio Cerebri.* Los Angeles, San Lucas Press, 1953.

Dock, William; Mandelbaum, Harry; and Mandelbaum, Robert A.: *Ballistocardiography,* St. Louis, C. V. Mosby, 1953.

Goldberger, Emanuel: *Unipolar Lead Electrocardiography and Vectorcardiography,* ed. 3, Philadelphia, Lea and Febiger, 1953.

Goodman, Joseph I., and others: *Diabetic Neuropathies,* Springfield, Ill., Charles C. Thomas, 1953.

Jensen, Julius: *Modern Concepts in Medicine,* St. Louis, C. V. Mosby, 1953.

Lamanna, Carl, and Mallette, M. Frank: *Basic Bacteriology, Biological and Chemical Background,* Baltimore, Williams and Wilkins, 1953.

Lull, Clifford B., and Kimbrough, Robert A.: *Clinical Obstetrics.* Philadelphia, J. B. Lippincott, 1953.

National Industrial Conference Board, Inc.: *Atomic Energy in Industry,* 1953.

New York Heart Association, Criteria Committee: *Nomenclature and Criteria for Diagnosis of Diseases of the Heart and Blood Vessels,* 5 ed., New York, New York Heart Association, 1953.

Wakeley, Sir Cecil: *Rose and Carless' Manual of Surgery for Students and Practitioners,* ed. 18, Baltimore, Williams and Wilkins, 1952.

RECENT PUBLICATIONS BY TEXAS PHYSICIANS

Following is a list of articles by Texas physicians published since October, 1952, and available at the Memorial Library of the Texas Medical Association.* If a physician who has had a paper printed in the past ten months is not named below, the Library would appreciate being notified. Also, the Library would like to have two reprints of each article. Because of space limitations, the list cannot appear in its entirety in this issue; it will be continued in subsequent issues.

Alexander, Lee J., and Shields, Thomas L.: Squamous Cell Carcinoma of Vulva Secondary to Granuloma Inguinale, Arch. Dermat. & Syph. *67:*395-402 (April) 1953.

Arnold, Jasper H.: Rational Treatment of Urinary Tract Infections, M. Rec. & Ann. *47:*395-397 (Jan.) 1953.

Ashkenazy, M., and Crawley, J. M.: Value of Serial Studies of Cerebrovascular Permeability with Radioactive Iodinated Serum Albumin and Scintillation Counter, Particularly in Detection of Neurosurgical Lesions, Am. Surgeon *19:*155-164 (Feb.) 1953.

Barcus, W. S.: Treatment of Incurable Disease, Bull. Tarrant County M. Soc., February, 1953, p. 11.

Bell, Robert H.: Management of Common Anorectal Conditions with Special Emphasis on Prevention of Pain, Am. Surgeon *19:*382-385 (April) 1953.

Berrey, Bedford H.: Chondrodystrophia Calcificans Congenita, J. Pediat. *42:*474-477 (April) 1953.

Bieberdorf, Frederick W., and Swinny, Boen: Mesquite and Related Plants in Allergy, Ann. Allergy *10:*720-724 (Nov.-Dec.) 1952.

Blattner, Russell J.: Clinical Aspects of Host-Parasite Relationship in Viral and Rickettsial Disease, M. Rec. & Ann. *47:*524-527 (May) 1953.

Blocker, T. G., Jr.; Lewis, S. R.; and Snyder, C. C.: Plastic Construction of Artificial Vagina; Further Experiences, Plast. & Reconstruct. Surg. *11:*177-182 (March) 1953.

Blair, Lyman C.: Sigmoidoscopy, Surg., Gynec. & Obst. *96:*249-250 (Feb.) 1953.

Bowen, Ralph: Allergy in Identical Twins, J. Allergy *24:*236-244 (May) 1953.

Bowers, C. Richard, and Shannon, Manning B.: Parathyroid Adenoma with Neurologic Symptoms, Arch. Surg. *66:*695-697 (May) 1953.

Boylston, Bedford F.: Infected Compound Fractures of Ankle, Am. Surgeon *19:*213-219 (Feb.) 1953.

Braastad, Fred W., and Mata, John J.: Treatment of Cancer of Recto-Sigmoid Region, M. Rec. & Ann. *47:*435-436 (Feb.) 1953.

Bradfield, Eldon O.: Bilateral Ureteral Obstruction Due to Envelopment and Compression by Inflammatory Retroperitoneal Process, J. Urol. *69:*769-774 (June) 1953.

Brauer, Raymond O.: Consideration of LeMesurier Technic of Single Harelip Repair with New Concept as to Its Use in Incomplete and Secondary Harelip Repairs, Plast. & Reconstruct. Surg. *11:*275-289 (April) 1953.

Brindley, G. V., Jr.: Bronchogenic Carcinoma Simulating

*Articles appearing in the JOURNAL are not included.

Benign Pulmonary Disease, Ann. Surg. *137*:616-627 (May) 1953.

Brockman, H. LeRoy; Cooley, Denton A.; and DeBakey, Michael E.: Acute Gastroduodenal Perforation: Analysis of Forty-Four Cases Treated by Immediate Gastrectomy. Am. Surgeon *19*:182-190 (Feb.) 1953.

Brown, Warren T., and Smith, Jackson A.: Differentiation and Management of Abnormal Mental States in Aged, South. M. J. *46*:582-584 (June) 1953.

Bynum, F. L.: Hemoglobinuria and Alcaptonuria, Bull. Tarrant County M. Soc., October, 1952, p. 9.

Carter, Rexford G.: Vesical Neck Obstruction with Over 8,000 cc. Residual Urine, J. Urol. *69*:118-120 (Jan.) 1953.

Chapman, Don W.; Skaggs, Ray H.; Johnson, Ira M.: Mills, Lewis C.; and Cooley, Denton A.: Venous Catheterization of Heart in Selection of Patients for Mitral Commissurotomy, South. M. J. *46*:343-347 (April) 1953.

Chapman, Don W.; Skaggs, Ray H.; Johnson, Ira M.; Mills, Lewis C.; and Cooley, Denton A.: Clinical Selection of Preoperative Preparation of Patients with Mitral Stenosis for Surgical Treatment (Commissurotomy), South. M. J. *46*:439-442 (May) 1953.

Cheek, J. Harold: Survey of Current Opinions Concerning Carcinoma of Breast Occurring During Pregnancy, Arch. Surg. *66*:664-672 (May) 1953.

Church, John M.: Gout and Greatness, Bull. Tarrant County M. Soc., March, 1953, p. 10.

Clayton, R. S.: Simplified Technique for Roentgenography of Immobilized Patients, Am. J. Roentgenol. *69*:472 (March) 1953.

Cody, C. C., III.: Hemangioma of Parotid Gland, Arch. Otolaryng. *57*:509-515 (May) 1953.

Cooley, Denton A.: Clinical Significance of Cavernolithiasis, J. Thoracic Surg. *25*:246-255 (March) 1953.

Cooley, Denton A.; DeBakey, Michael E.; and Chapman, Don W.: Surgical Treatment of Mitral Stenosis by Commissurotomy: Report of Fifty Cases, Am. Surgeon *19*:165-173 (Feb.) 1953.

Cooper, B. M.; Slocum, H. C.; and Allen, C. R.; Tetraethylthiuram Disulfide (Antabuse) and Anesthetic Agents, Anesthesiology *14*:29-32 (Jan.) 1953.

Crawford, E. Stanley, and Haynes, B. W., Jr.: Use of Nor-Epinephrine in Treatment of Hypotension Associated with Common Surgical Conditions, Am. Surgeon *19*:191-201 (Feb.) 1953.

Cronin, Thomas D.: Extensive Pigmented Nevi in Hair-bearing Areas: Removal of Pigmented Layer While Preserving Hair Follicles, Plast. & Reconstruct. Surg. *11*:94-106 (Feb.) 1953.

DeBakey, M. E., and Cooley, D. A.: Successful Resection of Aneurysm of Thoracic Aorta and Replacement by Graft, J.A.M.A. *152*:673-676 (June 20) 1953.

DeBakey, M. E., and Heaney, John P.: Tracheo-Esophageal Fistula Due to Nonpenetrating Injury, Am. Surgeon *19*:97-106 (Feb.) 1953.

DeBakey, Michael E.: Problem of Carcinoma of Lung, Am. Surgeon *19*:1-8 (Jan.) 1953.

DeBakey, Michael E., and Cooley, Denton A.: Successful Resection of Mycotic Aneurysm of Superior Mesenteric Artery, Am. Surgeon *19*:202-212 (Feb.) 1953.

Dukes, C. D., and Blocker, T. G., Jr.: Studies on Survival of Skin Homografts, I. Prolongation of Life of Full-Thickness Grafts by Action of Streptokinase-Streptodornase, Ann. Surg. *136*:999 (Dec.) 1952.

Eames, Daniel H., Jr.: Study of Management of Pregnancy Subsequent to Cesarean Section, Am. J. Obst. & Gynec. *65*:944-952 (May) 1953.

Ehni, George J.: Injuries of Peripheral Nerves and Plexuses, S. Clin. North America, 563-606 (April) 1953.

Faust, Fredric B.: Anticoagulation and Alphatocopherol, Bull. Potter County M. Soc. *7*:4-5 (June) 1953.

Fletcher, Gilbert H.: Cervical Radium Application with Screening in Direction of Bladder and Rectum, Radiology *60*:77-84 (Jan.) 1953.

Fein, Bernard T.: Bronchial Asthma: Review of Four Hundred Cases in Veterans of World War II, Am. Pract. & Digest Treat. *4*:206-209 (March) 1953.

Forbes, Gilbert B.: Quarantine for Scarlet Fever? Dallas M. J., March, 1953, p. 37.

Contributions to Library

Grateful acknowledgment is made by the Texas Medical Association Memorial Library of the following recent gifts:

Dr. Thomas J. Archer, Jr., Austin, 109 journals.

Dr. Bernard J. Ficarra, Brooklyn, his book, "A Psychosomatic Approach to Surgery."

Dr. P. I. Nixon, San Antonio, "A History of the Texas Medical Association 1853-1953, Source Letters."

MOTION PICTURES FOR LOAN

Oxygen Therapy Procedures

16 mm., sound, 30 minutes. (Courtesy of Linde Air Products Co., New York.)

This film illustrates and explains accepted oxygen therapy technique. It is excellent for use in medical schools and hospitals.

Studies in Human Fertility

16 mm., sound, 40 minutes. (Courtesy of Ortho Products, Inc., Linden, N. J.)

Designed to give physicians a concise, up-to-date presentation of contraceptive methods to enable them to prescribe for the requirements of individual patients, the film is excellent for general practitioners.

Oxygen Therapy in Heart Disease

16 mm., sound, 30 minutes. (Courtesy of Linde Air Products Co., New York.)

The film is of a conference on the clinical use of oxygen in the treatment of several types of heart disease. The type of patient on whom it should be used, when to start treatment, results to the patient, oxygen concentration, apparatus and techniques, and length of treatment are discussed.

Supra-Aortic Esophagogastrostomy for Carcinoma of Midportion of Esophagus

16 mm., silent, color, 40 minutes. (Courtesy of Dr. Philip Thorek, Chicago.)

This film presents a resection for carcinoma of the midportion of the esophagus. The esophagus is mobilized from the thoracic inlet above to its entrance into the stomach below, detached at its gastric end, and brought over the arch of the aorta. Following removal of the tumor and partial esophagogastrostomy, a transthoracic supra-aortic end-to-side esophagogastrostomy is performed. Postoperative follow-up pictures of the patient, diagrammatic illustrations of the operative procedure, and roentgen-ray studies amplify the film.

Dysmenorrhea, Primary

16 mm., silent, color, 45 minutes. (Courtesy of G. D. Searle and Company, Chicago.)

Problems associated with diagnosis and treatment, including discussions of ten different commonly used drugs with laboratory and clinical studies of their efficacy, are presented. Animations show endocrine relationships be-

tween the anterior pituitary gland and the hormone-producing parts of the ovary, the graafian follicle, and the corpus luteum. Also depicted is action of the ovarian hormones in production and control of cyclical menstruation. The study of drugs includes the intrauterine balloon technique, Bicker's modification of the technique developed by Wilson and Kurstok.

BOOK NOTICES

[1]Acute Renal Failure

JOHN T. MACLEAN, M. D., F.R.C.S. (C.), F.A.C.S., *Assistant Urologist, Royal Victoria Hospital; Demonstrator in Surgery, McGill University, Montreal. 114 pages. $6.50. Springfield, Ill., Charles C. Thomas, 1952.*

This well written, readable, little book deals principally with the problems of anuria.

The present clinical concept of this condition has developed largely in the past ten years. This has occurred chiefly as a result of the recognition of the lower nephron nephrosis syndrome and the advances in understanding of fluid and electrolyte balance.

These studies have made it apparent that intravenous fluids and diuretics will not cause urine formation to occur (except in the dehydrated patient with normal kidneys) but in fact can produce pulmonary edema and death.

In those cases of anuria which are reversible, the object of treatment must be to do only that which will lighten the patient's metabolic load so that he may survive until his kidneys have recovered enough to resume normal function.

Dr. MacLean discusses the pathologic anatomy and physiology and describes in detail a regimen of clinical management which is in accord with the presently accepted clinical opinion on the subject.

There is, in addition, a section on the various methods of "removing excess waste products from the blood," including descriptions and pictures of several "artificial kidneys" and their indications.

The illustrations are excellent.

This book may be recommended for any physician who may have to deal clinically with renal failure.

[2]Physiological Bases of Gynecology and Obstetrics

S. R. M. REYNOLDS, M. A., Ph. D., D. Sc., Dr. hon. causa., *Staff Member, Physiologist, Department of Embryology, Carnegie Institute of Washington; Professor Honoris Cause, Facultad de Medicina, Universidad de la Republica Oriental del Uruguay, Montevideo, Uruguay. American Lectures in Gynecology and Obstetrics. Edited by* E. C. HAMBLEN, B. S., M. D., F.A.C.S. *153 pages. $5.50. Springfield, Ill., Charles C. Thomas, 1952.*

This monograph contains the course of fifteen lectures which the author gave before the postgraduate school of the Facultad de Medicina de Montevideo. These lectures are intended for the postgraduate instruction of physicians interested in obstetrics and gynecology. They cover the author's ideas on the physiologic mechanisms of the uterus in both menstruation and pregnancy, including labor. Also included are lectures on the somatic vascular actions of steroid hormones, the regulation of vascular activity in the ovary as concerns ovarian functions, and the endocrine effects of hysterectomy. He presents some findings concerning uterine physiology and ovarian vasculature and functions that are the results of his own original work. These will make interesting reading and food for thought for the physician who is interested in obstetrics and gynecology.

The author also reports his work and that of others concerning the physiologic basis for onset and progress of labor, which is also thought provoking. He thinks that there is some endocrine function of the uterus and that hysterectomy is not merely the loss of the incubator for the fertilized ovum. This controversial idea is presented with confirmatory evidence.

The entire volume is well prepared and easily read. It should be read by and available to every physician interested in the progress of obstetrics and gynecology.

[3]Operating Room Technic

St. Mary's Hospital, Rochester, Minn. Fourth edition. $6.50. Philadelphia, W. B. Saunders, 1952.

This manual is a completely rewritten edition of the widely used book originally published in 1924 outlining the operating room methods utilized at the St. Mary's Hospital in Rochester, Minn.

A thoroughly practical book, it is of primary value to surgical nurses and assistants.

The operative procedures used in general surgery, orthopedic surgery, neurologic surgery, urology, and peroral endoscopy are presented in outline form together with instruments and linens required for each procedure. The more recently developed cardiac operative procedures are included.

The book is amply illustrated with recent photographs, diagrams, and sketches to clarify the text.

A modernized edition of a book which finds almost daily usage in operating suites has been produced.

[4]Toxemias of Pregnancy

WILLIAM J. DIECKMANN, B. S., M. D., *Mary Campau Ryerson Professor and Chairman of the Department of Obstetrics and Gynecology of the University of Chicago; Chief of Service of the Chicago Lying-In Hospital and Dispensary; Associate Editor of the American Journal of Obstetrics and Gynecology. Second edition. 710 pages. $14.50. St. Louis, C. V. Mosby, 1952.*

In the preface to the second edition of this authoritative work, the author states that he had hoped by this time that the cause of eclampsia would be known but that actually the number of facts brought to light since the first edition was released are disappointingly small.

This volume is divided into six sections with a rather complete reference bibliography for each section.

The first section, "History, Classification, Incidence and Pathology of the Toxemias of Pregnancy," is a discussion of the classification and incidence of toxemias and a chapter on the gross and microscopic pathologic changes in the disease.

The second, and most voluminous, section is "Normal and Abnormal Physiology" with comments and finding of a large number of authors on this phase of the toxemias.

In the third and most controversial section, "The Etiology of Eclampsia" is discussed. The constitutional and environmental factors influencing eclampsia in the pregnant woman are noted. The author maintains his theory that preeclampsia-eclampsia is due to abnormal water and electrolyte balance.

The fourth section discusses the clinical aspects of the toxemias of pregnancy.

The fifth section reviews and evaluates the various methods of treatment of toxemias.

The final section discusses the maternal and fetal mortality and sequelae of toxemias. It also stresses the importance of prenatal care in the recognition and prevention of toxemias.

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[1]*Jack W. Dworin, M. D., Longview.*
[2]*H. O. Padgett, M. D., Marshall.*
[3]*John F. Thomas, M. D., Austin.*
[4]*E. T. Crim, M. D., Greenville.*

This comprehensive volume has been written, as the author states, with two objectives in mind: (1) "To acquaint the obstetrician with some of the recent contributions on physiology pertaining to obstetrics" and (2) "To acquaint the investigator with some of the physiology and pathology of obstetrics." It succeeds in both these objectives.

Handbook of Pediatric Medical Emergencies

ADOLPH G. DESANCTIS, M. D., *Professor of Pediatrics and Chairman of the Department of Pediatrics, Postgraduate Medical School, New York University-Bellevue Medical Center; and* CHARLES VARGA, M. D., *Instructor in Pediatrics, Postgraduate Medical School, New York University-Bellevue Medical Center, New York City. 284 pages. $5. St. Louis, C. V. Mosby Company, 1951.*

This handbook, certainly not intended to be a complete text of pediatrics, deals primarily with conditions encountered in the practice of pediatrics which call for emergency therapy.

Separate chapters are devoted to the emergency treatment of the following: the cardiovascular system, gastrointestinal tract, genitourinary tract, neurologic conditions, and respiratory system. Also drowning, poisoning, and miscellaneous emergencies such as bites from animals and insects, burns, frostbite, hemorrhage, and hiccoughs, to mention a few, are included.

Diseases of Metabolism

Edited by GARFIELD G. DUNCAN, M. D., *Director of Medical Division, Pennsylvania Hospital; Clinical Professor of Medicine, Jefferson Medical College, Philadelphia. Third edition. 1,179 pages. Illustrated. $15. Philadelphia, W. B. Saunders, 1952.*

In the decade dividing the initial publication of the second edition and the present third, no field of medicine has undergone more chaotic discoveries or adjustment than that covering diseases of metabolism. The advent of ACTH and the clinical use of radioactive isotopes have altered considerably the composition of this book in which they are discussed fully, and in the case of the latter with a minimum of confusing formulas. These additions, plus the enlargement of various sections under the hands of new and welcome authorities, make this present publication a reference book of great practical value to all physicians in every branch of medicine.

—*W. H. Brauns, M. D., San Angelo.*

ORGANIZATION SECTION

TEXAS MEDICAL ASSOCIATION

EXECUTIVE COMMITTEE MEETING

Plans for the fall meeting of the Executive Council of the Texas Medical Association in Austin on September 13 are being completed. At press time several of the councils and committees had called meetings to precede the convening of the Executive Council, which will accept reports, discuss current business, and see the plaque for the General Practitioner of the Year presented to Dr. Clarence M. Cash of San Benito.

The Board of Trustees will meet at dinner Friday evening, September 11, and again the next day, at which time chairmen of the various councils and committees have been invited to present their requests for inclusion in the 1954 budget. The Telephone Postgraduate Broadcast Committee will meet at 9 a. m. September 12. The Board of Councilors has called a meeting for 2 p. m. that afternoon, as has the Council on Medical Education and Hospitals. The Council on Medical Jurisprudence will meet at 3:30 p. m. the same day, and the Council on Scientific Work at 8 p. m.. Several other meetings are still tentative.

The Executive Council will be called to order at 9 a. m., September 13, in the Association's headquarters building.

Next Telephone Broadcasts

"Obstetric Emergencies" will be discussed by a panel of four physicians when the next in the series of telephone postgraduate broadcasts sponsored by the Texas Medical Association is presented on October 13 at 8 p. m. Moderator will be Dr. William F. Mengert, Dallas, and the panel will be composed of Drs. Van D. Goodall, Clifton, whose subject will be "Obstetric Emergencies as Seen in General Practice"; W. Grady Reddick, Dallas, "Obstetric Emergencies Relating to Heart, Diabetes, and Anemia"; S. Foster Moore, San Antonio, "Surgical Emergencies Attending Reproduction"; and Robert A. Johnston, Houston, "Obstetric Hemorrhage."

Dr. James E. Kreisle, Austin, will be moderator at the November 10 broadcast when the following physicians present a panel discussion on the "Use of Antibiotics": Drs. W. V. Leary, Houston, "Use of Antibiotics in Respiratory Tract Infections, Including Tuberculosis"; E. J. Poth, Galveston, "Use of Antibiotics in Surgical Conditions"; Andres Goth, Dallas, "Fundamentals of Antibiotic Action"; and Robert L. Moore, Dallas, "Use of Antibiotics in Pediatric Practice."

County societies which desire to participate are urged to notify N. C. Forrester, Executive Secretary of the Association, before September 15. In addition, the society should send to the Executive Secretary the name of the contact man of the county society and indicate the place at which the meeting is to be held. Additional information about the broadcast series may be obtained from the Executive Secretary, 1801 Lamar Boulevard, Austin.

COUNTY SOCIETIES

Angelina County Society

April 9, 1953

(Reported by Byford H. Denman, President)

Bone Bank Bone—Denman C. Hucherson, Houston.
Pulsating Exophthalmos—Edmund Fountain, Houston.

Two Houston physicians presented a program for Angelina County Medical Society when it met April 9 in Lufkin. In addition to presentation of the papers named above, a motion picture of the Shrine Crippled Children's Hospital of Houston was shown.

A number of nurses were guests at the meeting.

May 14, 1953

(Reported by Byford H. Denman, President)

Milk Borne Diseases—James Everett Peavy, Austin.

The Angelina County Medical Society met May 14 in Lufkin as guest of the Land O' Pines Dairy and heard the above discussion by Dr. Peavy of the State Department of Health. Approximately twenty physicians and fifteen nurses attended and toured the new dairy plant.

Austin-Waller Counties Society

April 14, 1953

(Reported by J. T. Billups, Councilor, District 9)

Members of the Austin-Waller Counties Medical Society met with their wives in the home of Dr. and Mrs. S. C. Walker, Hempstead, on April 14. Denton Kerr, Houston, spoke about his recent trip to Pakistan, where he was sent by the American Medical Association to survey health conditions and the medical situation there. J. T. Billups, Houston, Ninth District Councilor, was also a guest at the meeting.

Brazoria County Society

May 28, 1953

(Reported by Carlos E. Fuste, Jr., Secretary)

Cardiovascular Surgery—Denton Cooley, Houston.

The Brazoria County Medical Society met for its regular dinner meeting May 28 in Freeport and heard the above discussion by Dr. Cooley. It was announced that William T. Galloway, Freeport, would serve as host for the society's June social meeting.

Erath-Hood-Somerville Counties Society

May 12, 1953

The Erath-Hood-Somerville Counties Medical Society met in Stephenville May 12, with nine members and one guest present. The scientific program consisted of a case report by Nathan Cedars, Stephenville, followed by general discussion.

Joe J. Pate, Dublin, was elected president and Harry Redwine, secretary for the current year. It was decided that future meetings would be held alternately each month at Dublin and Stephenville with the host group providing the program for the meetings.

Grayson County Society

April 10, 1953

E. Ivan Bruce, Jr., director of the Postgraduate Division of the University of Texas Medical Branch, Galveston, was guest speaker at the April 10 meeting of the Grayson County Medical Society in Denison.

April 14, 1953

At a monthly dinner session April 14 in Denison, the Grayson County Medical Society heard a discussion of skin ailments by Arthur Schoch and Lee Alexander, both of Dallas.

Hardeman-Cottle-Foard-Motley Counties Society

May 21, 1953

(Reported by J. M. Taylor, Secretary)

Radium Treatment of Skin Cancers and Oral Cancers—A. G. Barsh, Lubbock.

Eight members attended the dinner meeting of the Hardeman-Cottle-Foard-Motley Counties Medical Society May 21 at the home of J. S. Stanley, Matador. Part of the scientific program was the presentation by W. R. Cashion, Lubbock, of roentgenograms to illustrate thoracic lesions and their diagnosis. Drs. Barsh, Cashion, and Frank B. Malone, Amarillo, were guests.

Harris County Society

April 11-12, 1953

Twenty medical officers from ten foreign countries were guests of the Harris County Medical Society April 11 and 12 in Houston. The foreign doctors were students in a special aviation medicine course at San Antonio. The society gave a luncheon for the visitors in the doctors' lounge of the Methodist Hospital, took them on a tour of the Texas Medical Center, and gave a reception for them on the Shamrock Hotel terrace.

The First Methodist Church gave a dinner in honor of the visiting doctors after the Sunday morning services.

Hill County Society

May 8, 1953

Pulmonary Suppuration—D. L. Paulson, Dallas.

Chronic Bronchitis and Emphysema—Otis Armstrong, Dallas.

Eleven members and two Cleburne physicians heard the above scientific program at the May 8 meeting of the Hill County Medical Society in Hillsboro. C. C. Campbell, Itasca, president, presided.

Howard-Martin-Glasscock-Borden-Scurry-Kent-Dickens-Garza-King-Stonewall Counties Society

May 26, 1953

New officers were elected May 26 in Big Spring at the first meeting of the Howard-Martin-Glasscock-Borden-Scurry-Kent-Dickens-Garza-King-Stonewall Counties Medical Society since the thirteen counties in the Permian Basin split into two county medical societies (the other society is the Andrews-Ector-Midland Counties Medical Society). Floyd Mays of Big Spring is president; John Y. Battenfield of Snyder is vice-president; and Marjorie Kirkpatrick of Big Spring is secretary.

R. B. G. Cowper, Big Spring, District 2 Councilor, conducted the dinner meeting, which was attended by approximately forty doctors and their wives. Future meetings are to be held the fourth Tuesday in each month at the Settles Hotel, Big Spring.

Jefferson County Society

May 11, 1953

Two Beaumont neurosurgeons conducted the monthly scientific program of the Jefferson County Medical Society in Beaumont May 11. They were Harry Starr and Earl Rafes, and the program was on muscular dystrophy. Program chairman was A. F. Reimers, Beaumont; Grady Bevil, Beaumont, president, presided.

Kerr-Kendall-Gillespie-Bandera Counties Society

May 11, 1953

(Reported by Russell E. Guill, Secretary)

Hepatitis—Burt Breath, San Antonio.

Kerr-Kendall-Gillespie-Bandera Counties Medical Society met May 11 in Bandera to hear the paper named above. In addition, C. P. McKenzie, Mexia, told the society about the Red Cross Regional Blood Center in Waco. Upon motion by Hugh Drane, Kerrville, seconded by W. H. Springall, Fredericksburg, it was agreed that each county might join in the blood center program if it desires.

A report on the Texas Medical Association meeting held in Houston the last week in April was given by Dwight Knapp and Choice Matthews, both of Kerrville, to the thirteen members present.

Lampasas-Burnet-Llano Counties Society

April 21, 1953

(Reported by M. K. Patteson, Secretary)

Program and Services of Texas Medical Association—Mr. N. C. Forrester, Austin.

Status of Poliomyelitis and Gamma Globulin—J. M. Coleman, Austin.

A program by two Austinites was given for the Lampasas-Burnet-Llano Counties Medical Society at its last meeting of the year, held April 21 at Buchanan Dam. Mr. N. C. Forrester, executive secretary of the Texas Medical Association, gave a résumé of the work being done by the Association and the services it provides its members. J. M. Coleman,

pediatrician and district councilor, discussed poliomyelitis and also spoke on the value of maintaining the local society.

The society voted to levy a $5 per capita assessment on the membership to pay for postgraduate telephone broadcasts.

Lubbock-Crosby Counties Society

June 2, 1953

(Reported by Frank C. Goodwin, Secretary)

Present Status of Cardiovascular Surgery—Denton Cooley, Houston. Discussion—O. W. English, John H. Selby, William H. Gordon, and A. G. Barsh, Lubbock.

At the June 2 meeting of the Lubbock-Crosby Counties Medical Society in Lubbock the above paper was presented along with lantern slides and photographs. Wallace I. Hess, Lubbock, president, presided.

San Patricio-Aransas-Refugio Counties Society

June 3, 1953

Laboratory Procedure Suitable for General Practitioner's Office—Joseph Pasternack, Corpus Christi.

John and Rose Tunnell of Taft were hosts for the bimonthly meeting June 3 in Sinton of the San Patricio-Aransas-Refugio Counties Medical Society. Approximately twenty members and guests heard the above discussion at the dinner meeting. C. A. Selby, president, presided.

Tarrant County Society

May 5, 1953

(Reported by S. W. Wilson, Secretary)

Reconstruction of Esophagus with Polythylene Tube: Experimental and Clinical Observations—Clive R. Johnson, Fort Worth. Discussion—Louis J. Levy, Charles J. Terrell, M. C. Archer, Ross Whittenburg, and Charles Robinson, Fort Worth.

Sixty-nine members were present at the May 5 meeting of Tarrant County Medical Society in Fort Worth. E. S. Harrison was elected to membership, and four new members, William W. Stout, James W. Tunstill, Billie Randal Hardwick, and T. D. Mayo, Jr., were introduced.

It was announced that the public relations committee would begin May 22 a series of talks open to the public. E. E. Anthony, Jr., presented the report of the legislative committee.

E. P. Hall, Jr., delegate, reported on certain actions taken by the House of Delegates during the 1953 annual session of the Texas Medical Association. R. G. Baker, councilor, announced that physicians nominated by Tarrant County Medical Society for honorary or inactive membership in the Association were elected accordingly by the House of Delegates.

The program was given as outlined above.

May 19, 1953

(Reported by S. W. Wilson, Secretary)

Incidence, Diagnosis, and Management of Early Carcinoma of Uterus Including Cytologic Methods of Cancer Detection—William F. Mengert, Dallas.

The program as outlined above was presented at the May 19 meeting of the Tarrant County Medical Society in Fort Worth.

Mrs. W. N. Jenkins, president of the Woman's Auxiliary to the Tarrant County Medical Society, discussed plans for a television program which was to be sponsored by the Auxiliary this summer.

E. E. Anthony, Jr., chairman of the legislative committee, discussed the Bricker Amendment. William M. Campbell, Weatherford, was introduced by M. C. Archer and spoke on the early practice of medicine. E. S. Harrison, new member was introduced as was John R. Winston, Temple, a visitor. J. K. Leverett was unanimously elected to membership.

Tom Green-Eight County Society

May 4, 1953

(Reported by T. G. Coleman, Secretary)

Treatment of Chest Trauma—Raleigh R. Ross, Austin.

The regular meeting of Tom Green-Eight County Medical Society was held May 4 in San Angelo. Henry Ricci gave his delegate's report on activities that took place during the 1953 annual session of the Texas Medical Association. A letter from Miss Susan Miles of the Tom Green County Crippled Children's Society requesting the county medical society to invite the Crippled Children's Division of the State Health Department to hold a clinic in San Angelo in the fall of 1953 was read. Members voted unanimously to extend such an invitation.

Gordon Madding, president, gave notice of the first annual clinical meeting, scheduled to be held May 14. He also read a proposed county medical society and hospital press-radio statement of principles, and it was voted to adopt this code. Dr. Madding announced plans for a proposed special newspaper medical section in the near future. Dr. Ricci moved to proceed with the plans, and the motion was passed.

Plans for a medical forum to consist of a public meeting with a panel of doctors to answer questions about selected topics was discussed, and the project was endorsed by the society.

The scientific portion of the meeting was devoted to the program outlined above.

Travis County Society

May 19, 1953

(Reported by C. H. McCuistion, Secretary)

Persistence of Infantile Hemangiomas, Untreated, from Infancy to Adulthood—C. H. McCuistion, Austin.

The last regular meeting of Travis County Medical Society until next fall was held May 19 in Austin. A paper which C. H. McCuistion, Austin, was to present at the American Medical Association annual session in New York made up the scientific program.

A report on the Texas Medical Association meeting just completed in Houston was made.

Wharton-Jackson-Matagorda-Fort Bend Counties Society

May 12, 1953

(Reported by Lorraine I. Stengl, Secretary)

Newer Concepts of Treatment of Intestinal Infections—Charles T. Stone, Galveston.

Members of the Wharton-Jackson-Matagorda-Fort Bend Counties Medical Society assembled May 12 at New Gulf for their regular meeting.

Don Martin was accepted as a member in the society upon transferring from the Hidalgo-Starr Counties Medical Society.

Charles T. Stone of Galveston presented a paper on intestinal infections.

Wichita County Society

May 22, 1953

The Wichita County Medical Society Tumor Clinic was held May 22 in Wichita Falls. Bladder tumors were discussed by Louis Theirmer, Owen Berg, and D. E. Fletcher. David Allen, director of the clinic in the absence of Bailey Collins, presided.

Wilbarger County Society

May, 1953

(Reported by C. Curtis Allen, Secretary)

Only three members were absent when the Wilbarger County Medical Society met informally in Vernon in May to view medical and surgical motion pictures. Each of four movies was followed by a discussion. Announcement was

made concerning the procurement of gamma globulin for use in prophylaxis and treatment of poliomyelitis.

DISTRICT SOCIETIES

Twelfth District Society

July 14, 1953

(Reported by Walter B. King, Secretary)

General Aspects of Surgical Trauma—A. O. Singleton, Jr., Galveston.
Management of Multiple Injuries—William H. Ainsworth, Galveston.
Acute Chest Injuries—A. W. Harrison, Galveston.
Treatment of Large Skin Defects Due to Burns and Other Trauma—Stephen Lewis, Galveston.
Injuries to Abdominal Viscera—Dr. Singleton.

The above program for the July 14 meeting of the Twelfth District Medical Society in Rockdale was presented by the Department of Surgery of the University of Texas Medical Branch, Galveston, and was approved for five hours of postgraduate instruction by the American Academy of General Practice.

F. J. L. Blasingame, Wharton, President-Elect of the Texas Medical Association, was speaker at the luncheon. Howard Dudgeon, Jr., Waco, district president, presided over the meeting.

Approximately one hundred doctors and their wives attended.

AUXILIARY SECTION

REPORT OF STATE TREASURER

(EDITOR'S NOTE: The following report of the Treasurer of the Woman's Auxiliary to the Texas Medical Association was submitted at the annual convention of the Auxiliary held in Houston, April 26-29, 1953. The report inadvertently was omitted from the transactions published in the July JOURNAL; it should have been included immediately preceding the Auditor's report on page 536.)

On April 21, 1953, the membership of the Woman's Auxiliary to the Texas Medical Association was 4,389. This number includes two state honorary members who are exempt from paying dues. Memberships have been paid to the Woman's Auxiliary to the American Medical Association for 4,387 members, and we were credited with one national honorary member. This number includes 305 members who paid dues but did not qualify for active membership.

An audited report, which is submitted separately, covers the transactions in the four funds which are under the custody of your Treasurer. The balance on hand April 21, 1953, in these funds is as follows:

General Fund		$11,706.43
Special Fund		5,256.99
Memorial Fund:		
Checking Account	$362.67	
Emergency Account	443.86	806.53
Library Fund		408.36
Total		$18,178.31

The Memorial Trust Fund is held by the Republic National Bank of Dallas. On March 31, 1953, the following report of assets was issued:

Cash	$ 449.85
Bonds	9,601.00
Common Trust A	4,092.41
Accrued Interest on Bonds	314.00
Total	$14,457.26

The Student Loan Funds are held in trust by the South Texas National Bank of Houston. On March 1, 1953, the following report of assets was issued:

George Plunkett Red Student Loan Fund—Trust 33

Bonds	$ 3,000.00
Cash	2,553.50
Notes Receivable	660.00
Total	$ 6,213.50

Student Loan Fund of the Woman's Auxiliary—Trust 147

Bonds	$ 3,000.00
Stocks	3,748.50
Cash	5,212.97
Notes Receivable	3,469.83
Total	$15,431.30
Total Student Loan Funds	$21,644.80

By way of recapitulation, a summary of all assets of the Auxiliary is as follows:

Funds under custody of the Treasurer, April 21, 1953	$18,178.31
Memorial Funds Held in Trust March 31, 1953	14,457.26
Student Loan Funds Held in Trust	21,644.80
Total All Funds	$54,290.37

As a supplement to this report, I wish to add that since the auditor's report was made an additional seventy-four members have paid dues. On April 26, 1953, the total membership of the Woman's Auxiliary to the Texas Medical Association was 4,463, and dues for 4,461 members had been paid to the Woman's Auxiliary to the American Medical Association.

MRS. O. M. MARCHMAN, JR., Dallas.

Officers of the Woman's Auxiliary to the Texas Medical Association: President, Mrs. E. W. Coyle, San Antonio; President-Elect, Mrs. Mark H. Latimer, Houston; First Vice-President (Organization), Mrs. John D. Gleckler, Denison; Second Vice-President (Physical Examinations), Mrs. Cecil O. Patterson, Dallas; Third Vice-President (Today's Health), Mrs. Ralph B. Payne, Amarillo; Fourth Vice-President (Program), Mrs. Guy Knolle, Houston; Recording Secretary, Mrs. Paul Brindley, Galveston; Corresponding Secretary, Mrs. Charles L. McGehee, San Antonio; Treasurer, Mrs. Oscar M. Marchman, Jr., Dallas; Publicity Secretary, Mrs. Allen H. Neighbors, Jr., Austin; Parliamentarian, Mrs. H. S. Renshaw, Fort Worth.

AUXILIARY BOARD TO MEET IN SEPTEMBER

The all-day fall meeting of the Executive Board of the Woman's Auxiliary to the Texas Medical Association is scheduled for the Association building in Austin, Thursday, September 10. Mrs. E. W. Coyle, San Antonio, President of the Auxiliary, will call the meeting to order at 9 a. m., luncheon will be served at the building at noon, and business will be concluded by about 5 p. m. A dinner is set for 7 p. m. at the Driskill Hotel.

Various committees of the Auxiliary will meet the afternoon of September 9, and that evening motion pictures on health subjects will be shown at the Association headquarters and library building to all interested Auxiliary members.

Handbook for Auxiliary Being Prepared

A looseleaf handbook for members of the Woman's Auxiliary to the Texas Medical Association is being prepared under the direction of the President, Mrs. E. W. Coyle, San Antonio. One section will be designed primarily for each member of the Auxiliary and will explain briefly the purposes, organization, and program of the Auxiliary. Another section for distribution particularly to county auxiliary presidents will outline the specific duties of those offices, the relationship of the county auxiliary to the state organization, and methods for carrying on the work of county auxiliaries. A third section will enlarge on the duties and techniques of state officers and committee chairmen. Sec-

tions on legislation, public relations, and projects also are under consideration.

The various sections of the handbook will be issued independently and will be distributed to those groups for which they are particularly designed. The various sections will be collected for use as a unit by state officers, committee chairmen, and council women. As the material will be looseleaf, revisions in one or more pages can be made and the new pages inserted to keep the handbook up to date. It is anticipated that officers and committee chairmen will pass their handbooks on to their successors for guidance as they take office.

COUNTY AUXILIARIES

Bell County Auxiliary

Dr. Martin Towler of the University of Texas Medical Branch, Galveston, addressed an open meeting of the Woman's Auxiliary to the Bell County Medical Society April 10 on modern psychiatry. He was introduced by Mrs. G. V. Brindley, Sr., program chairman for the meeting. Mrs. G. V. Brindley, Jr., and Mrs. R. N. Bartels presided over the coffee service at the social hour following the meeting. Mrs. Ralph Greenlee was chairman of the hostesses for the meeting.

Mrs. Towler was a guest at the Temple meeting.

Mrs. F. F. Kirby, Waco, past State President, was a guest at the May 8 coffee given by the Woman's Auxiliary to the Bell County Medical Society in Temple to honor new and inactive members. Mrs. Kirby showed an AMA film on health.

The following new officers were introduced: Mrs. R. N. Bartels, president; Mrs. G. V. Brindley, Jr., first vice-president; Mrs. Raleigh White, second vice-president; Mrs. W. A. Chernosky, recording secretary; Mrs. J. D. Ibarra, treasurer; Mrs. H. B. Anderson, parliamentarian; Mrs. A. E. Moon, historian; Mrs. A. W. Sommer, press correspondent.

Bexar County Auxiliary

Speaker for the April 10 meeting of the Woman's Auxiliary to the Bexar County Medical Society in San Antonio was Dr. Roy C. Heflebower, assistant director of the M. D. Anderson Hospital for Cancer Research, Houston, who discussed the activities of the hospital. Dr. Heflebower was introduced by Mrs. Jack M. Partain, program chairman. Hostesses for the coffee were Mesdames J. B. Copeland, chairman; E. F. Lyon, Jr.; P. I. Nixon, Jr.; and John C. Parsons.

The Bexar County Auxiliary was hostess May 8 at a spring supper honoring the doctors. Mrs. John W. Worsham was general chairman.

On May 15 the auxiliary held its closing luncheon combining the final business meeting and the installation of officers. The following took office: Mesdames Parsons, president; J. Lewis Pipkin, president-elect; Charles W. Tennison, first vice-president; F. G. Lahourcade, second vice-president; Dudley Jackson, Jr., third vice-president; J. M. Morris, fourth vice-president; Jack B. Lee, recording secretary; M. A. Childers, Jr., corresponding secretary; James L. Mims, Jr., publicity secretary; Fred B. Cooper, treasurer; Russell T. Snip, auditor; E. F. Lyon, Jr., historian; and Willis Allin, parliamentarian.

Officiating at the installation was Mrs. B. H. Passmore, a past president. Mrs. Frank Paschal gave the invocation. Mrs. Moore introduced Mrs. E. W. Coyle, new President of the State Auxiliary; Mrs. Charles L. McGehee, State Corresponding Secretary; Mrs. John L. Pridgen, District 5 Council Woman; Mrs. A. O. Severance, Essay Contest Chairman; and Mrs. Frank Haggard, chairman of the Advisory Committee. Mrs. Parsons gave a report on the Woman's Auxiliary annual session in April in Houston.

Mrs. William Fetzer was chairman of the hostesses and was assisted by Mesdames T. E. Christian, Kent Hunt, and Dean Jones.—Mrs. L. Bonham Jones.

Denton County Auxiliary

The Denton County Auxiliary sponsored an annual benefit game party April 17 in Denton, with Mrs. Bert Davis as chairman. Proceeds were given to the March of Dimes, American Red Cross, American Heart Association, Girl and Boy Scouts of America, Kress Foundation for Nurses, Fred Moore Tuberculosis Fund, and for Denton school lunches, city and county libraries, and state and county tuberculosis funds.

Committee members were Mesdames J. David Thomas, H. C. Amos, Thomas Patterson, and George Hinkle.

Prizes were donated by merchants, druggists, and florists. Refreshments were served.

Galveston County Auxiliary

In honor of all Galveston County high school girls interested in nursing as a career, the Woman's Auxiliary to the Galveston County Medical Society gave a tea at the home of Dr. and Mrs. Robert M. Moore April 21.

Guest speaker was Captain Lillian Dunlap of the Army Nurse Corps, Fourth Army Headquarters, San Antonio. Captain Dunlap, nurse procurement officer for Texas, Oklahoma, Arkansas, Louisiana, and New Mexico, was invited to speak at the tea by Mrs. Andrew J. Magliolo, Dickinson, incoming auxiliary president and a former classmate of Captain Dunlap.

A card party was held in February to raise funds for a first-year scholarship for a student nurse to be awarded this summer.

Grayson County Auxiliary

The Grayson County Auxiliary closed its season May 8 with a coffee at the home of Dr. and Mrs. John Ellis, Sherman. New officers were installed as follows: Mrs. Stanley Clayton, Denison, president; Mrs. Donald Brandt, Denison, first vice-president; Mrs. Harry Shytles, Sherman, second vice-president; Mrs. Corliss Kepler, Denison, secretary; Mrs. Arthur Boyd, Sherman, treasurer; Mrs. Arthur Stoolfire, Sherman, parliamentarian; and Mrs. Creighton Reid, Sherman, historian.

Gregg County Auxiliary

On Doctor's Day, April 2, members of the Auxiliary to the Gregg County Medical Society honored their husbands with a dinner party at the Cherokee Club on Lake Cherokee. Mrs. D. C. Simmons was hostess, assisted by Mesdames R. H. Robertson, Jr. and W. M. Routon, of Kilgore.

Approximately twenty couples attended.

Howard-Martin-Glasscock-Borden-Scurry-Kent-Dickens Garza-King-Stonewall Counties Auxiliary

Mrs. Milton W. Talbot, Jr. of Big Spring was elected president of the Howard-Martin-Glasscock-Borden-Scurry-Kent-Dickens-Garza-King-Stonewall Counties Auxiliary May 26 at a dinner meeting with the county medical society in Big Spring. Mrs. James A. Wood, Big Spring, is vice-president, and Mrs. P. W. Malone, Big Spring, is secretary-treasurer.

Hunt-Rockwall-Rains Counties Auxiliary

Guest day was observed by the Hunt-Rockwall-Rains Counties Auxiliary April 7 at the home of Dr. and Mrs. E. E. Swindell, Greenville. The autobiography of Dr. A. J.

Cronin, "Adventures in Two Worlds," was reviewed by Mrs. Henry Pharr.

Mrs. E. T. Crim, president, presided and introduced the guests; Mrs. H. E. Mehmert presented the program; and Mrs. H. L. Lybrand gave the devotional. Co-hostesses with Mrs. Swindell were Mesdames W. C. Trimble, J. C. Vallancey, and Will Cantrell.

Kerr-Kendall-Gillespie-Bandera Counties Auxiliary

The Woman's Auxiliary to the Kerr-Kendall-Gillespie-Bandera Counties Medical Society met April 10 in the home of Dr. and Mrs. H. G. Pfeiffer, Fredericksburg, for a social hour and business meeting. Prizes of $15, $10, and $5 were awarded to the winners of the Association of American Physicians and Surgeons essay contest, and the three girls responded.

The following officers were elected: Mrs. Lorence Feller, Fredericksburg, president; Mrs. D. W. Brown, Fredericksburg, first vice-president; Mrs. Charles Jones, Jr., Kerrville, second vice-president; Mrs. H. P. Reid, Kerrville, treasurer; Mrs. Lester Keyser, Fredericksburg, secretary; Mrs. D. E. Packard, Kerrville, parliamentarian; and Mrs. C. B. Matthews, Clay, historian.

During the business meeting, details of the student nurse loan fund were revealed. The loan is to be given to one who might not otherwise be able to attend nursing school. A selective board has been set up to choose the recipient of the fund from applicants. The Peterson Memorial Hospital has granted a like scholarship for nurses.

Hostesses for the meeting were Mesdames Pfeiffer, Keyser, Feller, Brown, W. H. Springall, J. Hardin Perry, and Victor Keidel, of Fredericksburg.

Liberty-Chambers Counties Auxiliary

The annual spring tea of the Liberty-Chambers Counties Auxiliary was held April 24 in Liberty as a courtesy to civic leaders in the community. Mrs. Frank S. Griffin of Liberty registered the guests. Mrs. T. L. Fahring, Mrs. C. W. Castle, both of Anahuac, and other members assisted with hostess duties. Mrs. Melvin Anchell, Cleveland, auxiliary president, and Mrs. Reginald Wilson, Dayton, secretary, greeted guests.

McLennan County Auxiliary

Members of the McLennan County Auxiliary entertained Mrs. Robert F. Thompson of El Paso, President of the State Auxiliary, at a morning coffee February 20 in Waco. After having been introduced by Mrs. Maurice Barnes, Mrs. Thompson spoke to the local group. Hostesses for the coffee were Mesdames J. R. Shipp, C. J. Traylor, F. F. Kirby, Walter King, Jr., J. L. Kee, F. W. Hoehn, S. P. Howard, W. W. Klatt, T. L. Husbands, and H. Jaworski.

Mesdames A. J. Hertsell, W. M. Colgin, and James Colgin are in charge of the auxiliary's project to furnish a lounge for nurses at the Red Cross Regional Blood Bank. It was pointed out that more than 1,500 subscriptions to *Today's Health* have been taken and that many auxiliary members are taking part in civic projects.—Mrs. F. F. Kirby, Publicity Chairman.

At the May 6 meeting, Mrs. Joe Cook, president of the auxiliary to the Texas Dental Society, spoke on fluoridation of drinking water. Mrs. M. C. Carlisle installed Mrs. Eldon Fine as president for 1953-1954. Hostess for the coffee was Mrs. Loyal K. Wilson.

Nolan-Fisher-Mitchell Counties Auxiliary

With the aid of State President Mrs. Robert F. Thompson, El Paso, the Nolan-Fisher-Mitchell Auxiliary was reorganized in April with approximately fifteen members. Mrs. T. D. Young, Sweetwater, was elected president.

Palo Pinto-Parker Counties Auxiliary

Members of the Woman's Auxiliary to the Palo Pinto-Parker Counties Medical Society were entertained April 14 at the home of Mrs. William A. O'Quin, Mineral Wells. The program for 1953-1954 was planned, and the following officers were installed: Mrs. O'Quin, president; Mrs. John Merrick, Weatherford, vice-president; and Mrs. R. C. Jordan, Mineral Wells, secretary-treasurer.

Travis County Auxiliary

Officers were installed and reports on the State Auxiliary meeting at Houston in April were given when members of the Travis County Auxiliary assembled for a morning coffee May 19 at the Memorial Library and Headquarters Building of the Texas Medical Association in Austin.

Mrs. Allen H. Neighbors, Jr., retiring president, installed Mesdames Charles Dildy as president; S. W. Bohls, president-elect; G. G. Zedler, first vice-president; David Wade, second vice-president; L. L. Griffin, secretary; James Herrod, treasurer; and Lee Scarborough, publicity chairman. The four auxiliary delegates who attended the state meeting reported on the session and announced that Travis County Auxiliary won first place for its work in the field of geriatrics.

Hostesses for the coffee were Mesdames G. W. Cleveland and Hal McCuistion, co-chairmen; and Mesdames Harriss Williams, Edward Zidd, W. D. Roberts, M. F. Kreisle, M. D. McCauley, W. F. Creel, Harold Robinson, S. W. Hayes, George W. Haan, Will Watt, Nelson Schiller, Clay Perkins, J. E. Prewett, Richard A. Lucas, A. G. Garcia, Hugo Auler, and W. E. Williams.—Mrs. George Tipton.

Webb-Zapata-Jim Hogg Counties Auxiliary

The Woman's Auxiliary to the Webb-Zapata-Jim Hogg Counties Medical Society was organized April 21 in the Hamilton Hotel, Laredo, by Mrs. Robert F. Thompson, El Paso, State President, who explained the purposes of the organized group of doctors' wives. After her talk, in which she complimented Laredo on its woman's club project, nurses' training for local girls, the following officers were elected: Mrs. M. E. Melakoff, president; Mrs. E. M. Longoria, vice-president; Mrs. Herbert L. Warres, secretary; and Mrs. Val Puig, Jr., treasurer, all of Laredo.

DISTRICT AUXILIARIES

Twelfth District Auxiliary

The Twelfth District Auxiliary met July 14 in Rockdale with Mrs. E. W. Coyle, San Antonio, State President of the Woman's Auxiliary, as a guest. The organization of active civil defense units for peacetime disasters was stressed by Mrs. Coyle, who also discussed mental health education on the school and community level, participation in the American Medical Education Foundation, and the promotion of the reading of *Today's Health* in schools and homes.

The following are the new district officers: Mrs. Milton Spark, Waco, president; Mrs. C. L. Gary, Jr., Corsicana, vice-president; Mrs. G. V. Brindley, Jr., Temple, secretary; and Mrs. E. L. Clark, Cleburne, press reporter.

County reports were given by Mrs. R. N. Bartels, Bell County; Mrs. R. D. Holt, Bosque County; Mrs. Clark, Johnson County; Mrs. Eldon B. Fine, McLennan County; Mrs. T. O. Walton, Brazos-Robertson Counties; Mrs. William L. Carrington, Limestone County; and Mrs. Paul H. Mitchell, Navarro County. All counties reported that their next yearbooks were being planned to include safety, civil defense, and educational programs as well as civic cooperation for worthy drives on the community level.

The auxiliary met with the medical society to hear scien-

tific talks by Drs. A. O. Singleton, Jr., William H. Ainsworth, A. W. Harrison, and Stephen Lewis, all of the University of Texas Medical Branch at Galveston.

Other guests besides Mrs. Coyle, were Mrs. Charles L. McGehee of San Antonio, Mrs. A. O. Singleton, Jr., of Galveston, and Miss Nell Owen of Elgin.—Mrs. E. L. Clark, Press Reporter.

Fourteenth District Auxiliary

The Fourteenth District Auxiliary met as guests of the Cook County Woman's Auxiliary May 26 in Gainesville. After a tour of the state school for girls, a luncheon and business meeting were held. Mrs. Joseph H. McCracken, Jr., Dallas, Council Woman and district president, presided.

The invocation was given by a past State President, Mrs. O. W. Robinson of Paris. Mrs. V. C. Cirone, Gainesville, Cook County Auxiliary president, gave greetings, followed by a response from Mrs. C. D. Savage, Greenville, district vice-president.

Mrs. Ramsay H. Moore, Dallas, treasurer, reported that all counties in the district had paid dues for the year. Talks were given by Mrs. Mark Latimer, Houston, President-Elect of the State Auxiliary; Mrs. John D. Gleckler, Denison, First Vice-President of the State Auxiliary; and Mrs. H. V. Norgaard, Denton.

The following slate of new officers was presented by Mrs. Gleckler, chairman of the nominating committee, and duly elected: Mesdames James W. Atchison, Gainesville, president; Emmett Essin, Jr., Sherman, president-elect; E. T. Crim, Greenville, first vice-president; and Cirone, secretary-treasurer.

Auxiliary and society members were entertained with a barbecue in the evening at the home of Dr. and Mrs. Cirone.—Mrs. Ramsay H. Moore, Secretary.

DEATHS

L. F. BLAND

Dr. Leonard Fredric Bland, Dallas, Texas, died of uremia May 10, 1953, in a Dallas hospital.

The son of Joseph and Euginia (Forte) Bland, Dr. Bland was born in Salado on December 24, 1877. He was graduated from Texas Agricultural and Mechanical College, College Station; attended for two years the University of Texas Medical Branch, Galveston; and received his doctor of medicine degree in 1904 from the Memphis Hospital Medical College, Memphis. He did postgraduate work at Harvard Medical School and studied abroad. Dr. Bland practiced

DR. LEONARD F. BLAND

in Willis, Glendale, and Port Arthur before moving to Dallas in 1912. He served as a lieutenant in the Army Medical Corps in World War I, after which he specialized in eye, ear, nose, and throat.

Dr. Bland was a member of the American Medical Association and the Texas Medical Association through the Dallas County Medical Society for many years. He also belonged to the Shrine, the Knights Templar, and the Methodist Church.

In Port Arthur on March 25, 1909, Dr. Bland married the former Miss Cora Pace, who survives him. He is also survived by three brothers, Vernon Bland, Kirbyville; Benjamin Bland, Texarkana; and Mack Bland, Kennewick, Wash.

J. K. BATES

Dr. Joseph Knox Bates, Pittsburg, Texas, died May 8, 1953, in that city.

DR. JOSEPH K. BATES

The son of Ella and Joe C. Bates, Dr. Bates was born May 7, 1876, in Pine, Camp County. He was graduated from Grayson College in Whitewright in 1898 and from what was then the Memphis Hospital Medical College, Memphis, in 1903. He then practiced in Pine, Naples, and Pittsburg until his death.

An obituary ordinarily will not be published more than four months after date of death. Cooperation in reporting deaths of physicians and in furnishing appropriate biographical material promptly is solicited.

Dr. Bates was a member of the Texas Medical Association through the Camp County Medical Society and previously through the Morris County Medical Society. He also belonged to the American Medical Association and was an honorary member of the Southern Medical Association. Dr. Bates was president of the Camp County Medical Society in 1931 and secretary from 1933 to 1952. He was a city and county health officer and a member of the school board, city council, and the Methodist Church. He was inactive president of the Pittsburg National Bank from 1928 to 1935, at which time he was elected chairman of the board of directors, which position he held at the time of his death.

On May 25, 1902, Dr. Bates married the former Miss Dovie Sewell in La Fayette. She survives him as do a daughter, Mrs. George C. Hopkins, and a sister, Mrs. C. P. Davis, both of Pittsburg.

W. N. MARSHALL

Dr. William Norman Marshall, Florence and Smithville, Texas, died March 7, 1953, in Florence as a result of a head injury received in an automobile accident in 1950.

Dr. Marshall was born June 26, 1921, in New Franklin, Mo., the son of Norman Karl and Mildred Dawn Marshall.

DR. WILLIAM N. MARSHALL

He attended Lytle High School and Southwest Texas State Teachers College in San Marcos, where he received his bachelor of arts degree in 1942. After serving in the United States Navy from 1942 to 1946, he received his doctor of medicine degree May 29, 1948, from the Louisiana State University School of Medicine. He interned at Baylor Hospital in Dallas and Nan Travis Hospital in Jacksonville and served a two-year externship in Charity Hospital, New Orleans. He then practiced at Hoch Clinic and Hospital in Smithville, at the Veterans Administration Hospital at Big Spring, and at the Florence Clinic, which he leased in December, 1952.

A member of the Texas Medical Association through the Bastrop-Lee Counties Medical Society, Dr. Marshall also belonged to the LSU Medical Society, the LSU Surgical Society, Alpha Kappa Kappa fraternity, and the Baptist Church.

On July 19, 1952, Dr. Marshall married the former Miss Maria Jane Yantis of Austin, who survives him. Also surviving are his mother, Mrs. Dawn Marshall, Devine, and a sister, Mrs. James L. Donalson, Bishop.

R. P. ADDISON

Dr. Robert Perry Addison, Dallas, Texas, died May 8, 1953, in a Dallas hospital after several months' illness.

The son of W. I. and Lydia Addison, Dr. Addison was born in Dallas August 5, 1889. He attended the old Oak Cliff High School in Dallas and the University of Texas, Austin, before receiving his doctor of medicine degree in 1926 from Baylor University College of Medicine, then in Dallas. The following year he interned at Baylor Hospital in Dallas and then did postgraduate study in diagnosis at Harvard Medical School. He was a general practitioner in Dallas from 1927 until his death.

Dr. Addison had been a member of the Texas Medical Association through the Dallas County Medical Society since 1930. He also belonged to the American Medical Association and the Southern Medical Association. Other organizations to which he belonged include Alpha Mu Pi Omega medical fraternity, Phi Kappa Psi social fraternity, and the Masonic Order. Dr. Addison was one of the first Eagle Scouts in Dallas. He was a Baptist.

Surviving Dr. Addison are his wife, the former Miss Marguerite Spruiell; a son, Robert Spruiell Addison; a daughter, Miss Marguerite Addison; a brother, J. H. Addison; and three sisters, Mrs. E. W. Smith, Mrs. Homer Donald, and Miss Orenna Addison, all of Dallas.

J. H. MITCHELL

Dr. James H. Mitchell, Pittsburg, Texas, died in that city April 3, 1953, of coronary occlusion.

Born September 21, 1871, in Harrison County, the son of J. M. and Josephine Mitchell, Dr. Mitchell received his education at Elysian Fields High School and at the Univer-

DR. J. H. MITCHELL

sity of Louisville School of Medicine, Louisville, Ky., from which he was graduated in March, 1894. He practiced in Elysian Fields, Grayford, and Midyett before settling in Pittsburg in 1916. He had been county health officer, Selective Service examiner, and president of the Pittsburg Medical and Surgical Hospital.

Dr. Mitchell was a member of the American Medical Association and the Texas Medical Association through the Camp County Medical Society of which he was president in 1933. He had also belonged to the Panola and Jefferson Counties Medical Societies. He was a member of the Fifteenth District Medical Society and was an elder in the Presbyterian Church.

On February 5, 1896, Dr. Mitchell married Miss Emie Holland, who preceded him in death on February 15, 1940. Survivors are a son, James H. Mitchell, Pittsburg, and a sister, Mrs. T. H. Hudspeth, San Jose, Calif.

B. B. PRESTRIDGE

Dr. Barney Bertrand Prestridge, Donna, Texas, died of a heart attack April 7, 1953, in Lubbock.

Son of Dovie (Tomlin) Prestridge and the late T. B. Prestridge, Dr. Prestridge was born September 4, 1921, in Canton. He was educated at Lubbock High School and Texas Technological College at Lubbock and at the University of Texas Medical Branch at Galveston, where he was graduated with a doctor of medicine degree June 24, 1944. He interned at the University of Indiana Medical Center in Indianapolis and was a general practice resident at St. Luke's Hospital in Cedar Rapids, Iowa, after serving as a first lieutenant and then captain in the United States Army Medical Corps. Dr. Prestridge was a general practitioner in Donna from 1948 until shortly before his death. At the time of his death he was on his way to join the medical staff of the Phillips Petroleum Company in Phillips, Texas.

DR. BARNEY B. PRESTRIDGE

Dr. Prestridge was a member of the American Medical Association and the Texas Medical Association through the Hidalgo-Starr Counties Medical Society. He belonged to the American Academy of General Practice and the Texas Academy of General Practice as well as Theta Kappa Psi medical fraternity, the Presbyterian Church, and the Horseless Carriage Club. He was an amateur photographer and an enthusiastic pilot.

Dr. Prestridge is survived by his wife, the former Miss Marjorie Ruth Clapp, whom he married January 4, 1948, at Lost Nation, Iowa, and his mother, Mrs. Dovie Prestridge, of San Antonio.

N. P. DOAK

Dr. Nathaniel P. Doak, Houston, Texas, died April 20, 1953, in a Houston hospital of cancer of the liver.

The son of N. P. and Maggie (Burgher) Doak, Dr. Doak was born July 28, 1901, in Clarksville, where he attended public schools. He was graduated May 27, 1919, from Gulf Coast Military Academy, Gulfport, Miss., and attended the University of Texas, Austin, before receiving his medical degree May 28, 1928, from Baylor University College of Medicine, then in Dallas. He was a resident intern at Marine Hospital, Norfolk, Va., and at Parkland Hospital, Dallas. In 1929, Dr. Doak became associate medical director of the Great Southern Life Insurance Company in Houston, in which position he served until 1942, when he became acting medical director. From March, 1943, to his death he was medical director of the company.

Dr. Doak had been a member of the Texas Medical Association through the Harris County Medical Society since 1930. He belonged to the Dallas County Medical Society in 1929. He also belonged to the American Medical Associa-

DR. NATHANIEL P. DOAK

tion, the Association of American Physicians and Surgeons, the Society of Life Insurance Medical Directors of Texas, and the Association of Life Insurance Medical Directors of America. He served as a member of the medical section of the American Life Convention and the committee for medical examinations of the American Life Convention. He was a diplomate of the Board of Life Insurance Medicine. In addition, Dr. Doak belonged to the Methodist Church of Clarksville, the Masonic Lodge of Clarksville, Alpha Mu Pi Omega medical fraternity, and Alpha Tau Omega fraternity at the University of Texas.

On November 29, 1922, Dr. Doak married Miss Burke Robbins of Clarksville. She survives him as do his daughter, Mrs. Carroll Clarke Cook of Houston, two grandchildren, and a sister, Mrs. Henry Hemingway of Clarksville.

S. F. ROBINSON

Dr. Simon Frank Robinson, Crane, Texas, died March 13, 1953, of injuries received in an airplane crash at Post.

The son of Mr. and Mrs. J. C. Robinson, Paducah, Dr. Robinson was born September 10, 1905, at Commerce and

received his education at Southern Methodist University, Dallas, and Baylor University College of Medicine, then in Dallas, from which he received his medical degree in 1932. Following his internship at the United States Marine Hospital, Ellis Island, N. Y., he settled in Crane.

Dr. Robinson was a member of the American Medical Association and the Texas Medical Association through the Crane-Upton-Reagan Counties Medical Society, which he served as secretary for four years, and president for six years. He was Crane County health officer for two years and was also a member of the American Academy of General Practice. Dr. Robinson was treasurer of the First Methodist Church of Crane for twenty years.

On September 18, 1934, Dr. Robinson married Miss Sue C. Craven in Paducah. She, Dr. Robinson's parents, and a son, Ray Bob Robinson, survive.

A. L. ROBERTS

Dr. Aaron Lamar Roberts, Fort Worth, Texas, died April 8, 1953, of cerebrovascular accident in that city.

Dr. Roberts was the son of Jefferson Davis and Mary D. (Huffman) Roberts and was born February 24, 1888, in Garrett. He attended public school at Garrett, Trinity University then in Waxahachie, and the University of Texas Medical Branch, from which he was graduated in June, 1916. He interned at a Gainesville hospital. He entered the United States Army Medical Corps August 24, 1917, at Fort Sam Houston and served overseas with an aviation unit for two years. As a lieutenant colonel in the Reserve, he was recalled to active duty in World War II and served for a short time. Since 1919, Dr. Roberts had been associated with Terrell's Laboratories in Fort Worth as a radiologist, with the exception of a few years spent in general practice.

DR. AARON L. ROBERTS

Dr. Roberts was a member of the American Medical Association and the Texas Medical Association through the Tarrant County Medical Society. Dr. Roberts was elected to honorary membership in the Texas Medical Association in 1951. He belonged to the Radiological Society of North America, the American College of Radiology, and the Dallas-Fort Worth Radiological Society. He was a member of the Thirteenth District Medical Society, of which he was a past president, and chief of staff of City-County Hospital for a number of years. He also belonged to Alpha Kappa Kappa medical fraternity and the Methodist Church.

On August 23, 1917, Dr. Roberts married the former Miss Jessie Foster in Ennis. She survives him. Other survivors include a son, Lieut. A. L. Roberts, Jr., United States Navy, Newport, R. I.; a daughter, Mrs. Alex Sears, Abilene; a sister, Mrs. Helen Kidder, Compton, Calif.; and three grandchildren.

H. KLAPPROTH

Dr. Herman Klapproth, Jr., Sherman, Texas, died of a heart attack April 3, 1953, in Midland.

Dr. Klapproth was born in Midland on February 1, 1904, the son of Mr. and Mrs. Herman Klapproth, Sr., pioneer settlers. He attended public schools in that city and was a graduate of the University of Texas, Austin. He received his doctor of medicine degree in 1929 from the University of Texas School of Medicine, Galveston, and then interned at John Sealy Hospital, also in Galveston. Dr. Klapproth practiced at Midland and in Kansas for several years, and from

DR. HERMAN KLAPPROTH

1937 until his death, he practiced in Sherman, specializing in radiology. A staff member of St. Vincent's and Wilson N. Jones Hospitals in Sherman, he at one time was chief of staff of Wilson N. Jones Hospital.

Dr. Klapproth was a member of the American Medical Association and the Texas Medical Association through Ector-Midland-Martin-Howard-Andrews-Glasscock-Scurry-Dickens-Kent-Garza-Borden-King-Stonewall and Grayson Counties Medical Societies. In 1947 he was president of Grayson County Society. He was chairman of the Section on Radiology and Physiotherapy of the State Association in 1943. Dr. Klapproth was certified by the American Board of Radiology; was a member of the Radiological Society of North America; and was a member and past president of the Texas Radiological Society. In addition, he held memberships in Theta Kappa Psi medical fraternity and Alpha Omega Alpha honorary medical fraternity.

Surviving Dr. Klapproth are a brother, Judge Charles L. Klapproth, Midland; and three sisters, Miss Theresa Klapproth, Midland; Miss Anna May Klapproth, Amarillo; and Mrs. L. C. Sharp, Abilene.